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THERE BE**

by Gordon Dickson



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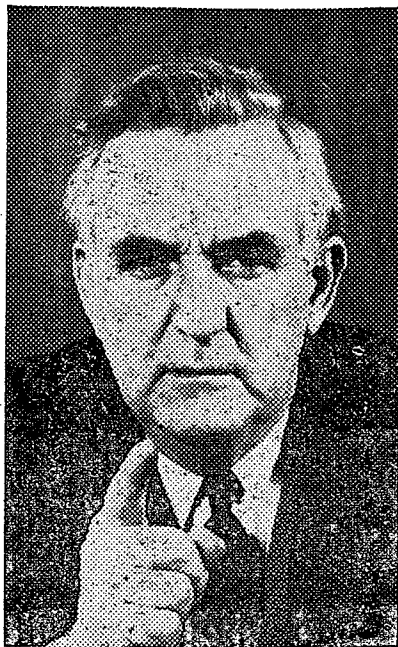


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## COMPLETE NOVEL

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By Murray Leinster .....

Publisher

MICHAEL MICHAELSON

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## EDITORIAL

**D**ISCUSSIONS of the possibilities of life on other worlds—a thing that would have gotten you a quick ride to the booby-hatch not too many years ago—are now the latest fancy of respectable people. Two such seminars on extra-terrestrial existence attracted our attention recently; not because either one of them had anything much new to contribute to the subject; but because of something that both of them overlooked, even though it was implicit in the statements.

First, the historian-philosopher Arnold Toynbee, at a panel session at which five eminent scientists agreed that life certainly exists elsewhere in the universe and man need not be so stuck up, made this point:

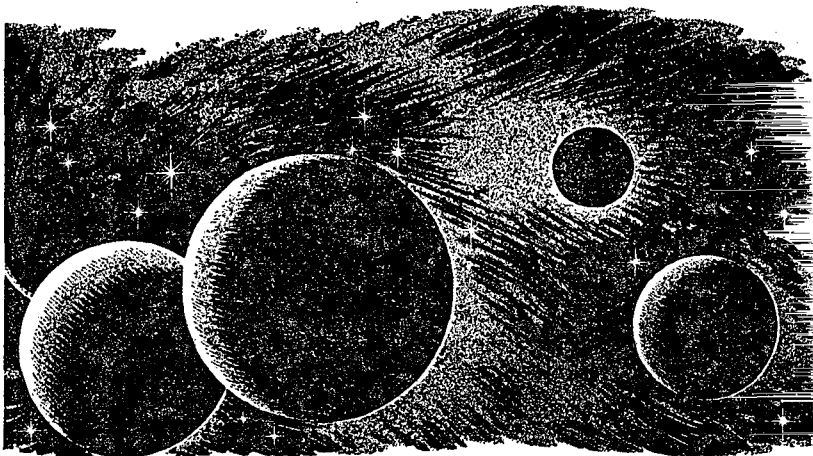
“No human beings have got very far yet in the exploration of the physical universe. The new worlds with whose life it is now most urgent for us to make contact are the spiritual worlds within ourselves.”

Meanwhile, back at the ranch

on the Potomac, the Brookings Institute, an impartial investigatory body, presented a report on conditions in space to the National Aeronautics and Space Administration. The report also calmly announced that “the discovery of intelligent life in other parts of the universe, while not likely in the immediate future, could nevertheless happen at any time.”

But then . . . then . . . the Brookings people added a key warning: if aliens are discovered, they said in effect, earth’s civilization could collapse as a result of fear or panic or a morbidly excessive inferiority complex. “Societies sure of their own place,” the report said, “have disintegrated when confronted by a superior society. Clearly,” the report continued, “the better we can come to understand the factors involved in responding to such crises the better prepared we may be.”

*(Continued on page 135)*



COMPLETE BOOK-LENGTH NOVEL

# PARIAH PLANET

By MURRAY LEINSTER

Illustrated by FINLAY

*When the blue plague appeared on the planet of Dara, fear struck nearby worlds. The fear led to a hate that threatened the lives of millions and endangered the Galactic peace.*

## CHAPTER 1

THE little Med Ship came out of overdrive and the stars were strange and the Milky Way seemed unfamiliar. Which, of course, was because the Milky

Way and the local Cepheid marker-stars were seen from an unaccustomed angle and a not-yet-commonplace pattern of varying magnitudes. But Calhoun grunted in satisfaction. There was a banded sun off to port, which was



good; A breakout at no more than sixty light-hours from one's destination wasn't bad, in a strange sector of the Galaxy and after three light-years of journeying blind.

"Arise and shine, Murgatroyd," said Calhoun. "Comb your whiskers. Get set to astonish the natives!"

A sleepy, small, shrill voice said;

"Chee!"

Murgatroyd the *tormal* came crawling out of his small cub-hole. He blinked at Calhoun.

"We're due to land shortly," Calhoun observed. "You'll impress the local inhabitants. I'll be unpopular. According to the records, there's been no Med Ship inspection here for twelve standard years. And that was practically no inspection, to judge by the report."

Murgatroyd said;

"Chee-chee!"

He began to make his toilet, first licking his right-hand whiskers and then his left. Then he stood up and shook himself and looked interestedly at Calhoun. *Tormals* are companionable small animals. They are charmed when somebody speaks to them. They find great, deep satisfaction in imitating the actions of humans, as parrots and mynahs and parroquets imitate human speech. But *tormals* have certain useful, genetically trans-

mitted talents which make them much more valuable than mere companions or pets.

Calhoun got a light-reading for the banded sun. It could hardly be an accurate measure of distance, but it was a guide. He said;

"Hold on to something, Murgatroyd!"

Calhoun threw the overdrive switch and the Med Ship flicked back into that questionable state of being in which velocities of some hundreds of times that of light are possible. The sensation of going into overdrive was unpleasant. A moment later, the sensation of coming out was no less so. Calhoun had experienced it often enough, and still didn't like it.

The sun Weald burned huge and terrible in space. It was close, now. Its disk covered half a degree of arc.

"Very neat," observed Calhoun. "Weald Three is our port, Murgatroyd. The plane of the ecliptic would be—Hm. . . ."

He swung the outside electron telescope, picked up a nearby bright object, enlarged its image to show details, and checked it against the local star-pilot. He calculated a moment. The distance was too short for even the briefest of overdrive hops, but it would take time to get there on solar-system drive.

He thumbed down the com-

municator-button and spoke into a microphone.

"Med Ship Aesclepius Twenty reporting arrival and asking coordinates for landing." Purpose of landing, planetary health inspection. Our mass is fifty tons standard. We should arrive at a landing position in something under four hours. Repeat. Med Ship Aesclepius Twenty . . ."

He finished the regular second transmission and made coffee for himself while he waited for an answer. Murgatroyd wanted a cup of coffee too. Murgatroyd adored coffee. He held a tiny cup in a furry small paw and sipped gingerly at the hot liquid.

A VOICE came out of the communicator;

*"Aesclepius twenty, repeat your identification!"*

Calhoun went to the control-board.

"Aesclepius twenty," he said patiently, "is a Med Ship, sent by the Interstellar Medical Service to make a planetary health inspection on Weald. Check with your public health authorities. This is the first Med Ship visit in twelve standard years, I believe, which is inexcusable. But your health authorities will know all about it. Check with them."

The voice said truculently;

*"What was your last port?"*

Calhoun named it. This was not his home sector, but Sector

Twelve had gotten into a very bad situation. Some of its planets had gone unvisited for as long as twenty years, and twelve between inspections was almost commonplace. Other sectors had been called on to help it catch up. Calhoun was one of the loaned Med Ship men, and because of the emergency he'd been given a list of half a dozen planets to be inspected one after another, instead of reporting back to sector headquarters after each visit. He'd had minor troubles before with landing-grid operators in Sector Twelve.

So he was very patient. He named the planet last inspected, the one from which he'd set out for Weald Three. The voice from the communicator said sharply;

*"What port before that?"*

Calhoun named the one before the last.

*"Don't drive any closer," said the voice harshly, "or you'll be destroyed!"*

Calhoun said coldly;

"Now you listen to me, friend! I'm from the Interstellar Medical Service! You get in touch with planetary health services immediately! Remind them of the Interstellar Medical Inspection Agreement, signed on Tralee two hundred and forty standard years ago. Remind them that if they do not cooperate in medical inspection that I can put your planet under quarantine and your



space commerce will be cut off like that! No ship will be cleared for Weald from any other planet in the galaxy until there has been a health inspection! Things have pretty well gone to pot so far as the Med Service in this sector is concerned, but we're trying to straighten it out. You have twenty minutes to clear this and then, I'm coming in. If I'm not landed, a quarantine goes on! Tell your health authorities that!"

Silence. Calhoun clicked off and poured himself another cup of coffee. Murgatroyd held out his cup for a refill. Calhoun gave it to him.

"I hate to put on an official hat, Murgatroyd," he said annoyedly, "but there are some people who won't have any other way.

Murgatroyd said "*Chee!*" and sipped at his cup.

Calhoun checked the course of the Med Ship. It bored on through space. There were tiny noises from the communicator. There were whisperings and rustlings and the occasional strange and sometimes beautiful musical notes whose origin is yet obscure, but which, since they are carried by electromagnetic radiation of wildly varying wavelengths, are not likely to be the fabled music of the spheres. He waited.

IN fifteen minutes a different voice came from the speaker. "*Med Ship Aesclepius! Med Ship Aesclepius!*"

Calhoun answered and the voice said anxiously;

"*Sorry about the challenge, but we have the blue-skin problem always with us. We have to be extremely careful! Will you come in, please?*"

"I'm on my way," said Calhoun.

"*The planetary health authorities,*" said the voice, more anxiously still, "*are very anxious to be coöperative. We need Med Service help! We lose a lot of sleep over the blueskins! Could you tell us the name of the last Med Ship to land here, and its inspector, and when that inspection was made? We want to look up the record of the event to be able to assist you in every possible way.*"

"He's lying," Calhoun told Murgatroyd, "but he's more scared than hostile."

He picked up the order-folio on Weald Three. He gave the information about the last Med Ship visit. He clicked off.

"What?" he asked, "is a blue-skin?"

He'd read the folio on Weald, of course, but as the ship swam onward through emptiness he went through it again. The last medical inspection had been only perfunctory. Twelve years earlier

—instead of three—a Med Ship had landed on Weald. There had been official conferences with health officials. There was a report on the birth-rate, the death-rate, the anomaly-rate, and a breakdown of all reported communicable diseases. But that was all. There were no special comments and no overall picture.

Presently Calhoun found the word in a Sector dictionary, where words of only local usage were to be found.

"Blueskin; Colloquial term for a person recovered from a plague which left large patches of blue pigment irregularly distributed over the body. Especially, inhabitants of Dara. The condition is said to be caused by a chronic, non-fatal form of Dara plague and has been said to be non-infectious, though this is not certain. The etiology of Dara plague has not fully been worked out. The blueskin condition is hereditary but not a genetic modification, as markings appear in non-Mendellian distributions.

...

Calhoun puzzled over it. Nobody could have read the entire Sector directory, even with unlimited leisure during travel between solar systems. Calhoun hadn't tried. But now he went laboriously through indices and cross-references while the ship continued travel onward. He

found no other reference to blueskins. He looked up Dara. It was listed as an inhabited planet, some four hundred years colonized, with a landing-grid and at the time the main notice was written out, a flourishing interstellar commerce. But there was a memo, evidently added to the entry in some change of editions.

"Since plague, special license from Med Service is required for landing."

That was all. Absolutely all.

The communicator said suavely;

*"Med Ship Aesclepius Twenty! Come in on vision, please!"*

Calhoun went to the control-board and threw on vision.

"Well, what now?" he demanded.

His screen lighted. A bland face looked out at him.

*"We have—ah—verified your statements,"* said the third voice from Weald. *"Just one more item. Are you alone in your ship?"*

"Of course," said Calhoun, frowning.

*"Quite alone?"* insisted the voice.

"Obviously!" said Calhoun.

*"No other living creature?"* insisted the voice again.

"Of—Oh!" said Calhoun annoyedly. He called over his shoulder. "Murgatroyd! Come here!"

Murgatroyd hopped to his lap and gazed interestedly at the screen. The bland face changed

remarkably. The voice changed even more.

"Very good!" it said. "Very, very good! Blueskins do not have tormals! You are Med Service! By all means come in. Your coordinates will be . . ."

Calhoun wrote them down. He clicked off the communicator again and growled to Murgatroyd;

"So I might have been a blueskin, eh? And you're my passport, because only Med Ships have members of your tribe aboard! What the hell's the matter, Murgatroyd? They act like they think somebody's trying to get down on their planet with a load of plague-germs!"

He grumbled to himself for minutes. The life of a Med Ship man is not exactly a sinecure, at best. It means long periods in empty space in overdrive, which is absolute and deadly tedium. Then two or three days aground, checking official documents and statistics, and asking questions to see how many of the newest medical techniques have reached this planet or that, and the supplying of information about such as have not arrived. Then lifting out to space for long periods of tedium, to repeat the process somewhere else. Med Ships carry only one man because two could not stand the close contact without quarreling with each other. But Med Ships do carry *tormals*,

like Murgatroyd, and a *tormal* and a man can get along indefinitely, like a man and a dog. It is a highly unequal friendship, but it seems to be satisfactory to both.

Calhoun was very much annoyed with the way the Med Service had been operated in Sector Twelve. He was one of many men at work to correct the results of incompetence in directing Med Service in the twelfth sector. But it is always disheartening to have to labor at making up for somebody else's blundering, when there is so much new work that needs to be done.

The condition shown by the landing-grid suspicions was a case in point. Blueskins were people who inherited a splotchy skin-pigmentation from other people who'd survived a plague. Weald plainly maintained a one-planet quarantine against them. But a quarantine is normally an emergency measure. The Med Service should have taken over, wiped out the need for a quarantine, and then lifted it. It hadn't been done.

Calhoun fumed to himself.

THE world of Weald Three grew brighter and brighter and became a disk. The disk had ice-caps and a reasonable proportion of land and water surface. The Med Ship decelerated, and voices notified observation from

the surface, and the little craft came to a stop some five planetary diameters out from solidity. The landing-field force-field locked on to it, and its descent began.

The business of landing was all very familiar, from the blue rim which appeared at the limb of the planet from one diameter out, to the singular flowing-apart of the surface features as the ship sank still lower. There was the circular landing-grid, rearing skyward for nearly a mile. It could let down interstellar liners from emptiness and lift them out to emptiness again, with great convenience and economy for everyone.

It landed the Med Ship in its center, and there were officials to greet Calhoun, and he knew in advance the routine part of his visit. There would be an interview with the planet's chief executive, by whatever title he was called. There would be a banquet. Murgatroyd would be petted by everybody. There would be painful efforts to impress Calhoun with the splendid conduct of public health matters on Weald. He would be told much scandal. He might find one man, somewhere, who passionately labored to advance the welfare of his fellow humans by finding out how to keep them well, or failing that how to make them well when they got sick. And in two days, or

three, Calhoun would be escorted back to the landing-grid, and lifted out to space, and he'd spend long empty days in overdrive and land somewhere else to do the whole thing all over again.

It all happened exactly as he expected, with one exception. Every human being he met on Weald wanted to talk about blueskins. Blueskins and the idea of blueskins obsessed everyone. Calhoun listened without asking questions until he had the picture of what blueskins meant to the people who talked of them. Then he knew there would be no use asking questions at random. Nobody mentioned ever having seen a blueskin. Nobody mentioned a specific event in which a blueskin had at any named time taken part. But everybody was afraid of blueskins. It was a patterned, an inculcated, a stage-directed fixed idea. And it found expression in shocked references to the vileness, the depravity, the monstrousness of the blueskin inhabitants of Dara, from whom Weald must at all costs be protected.

It did not make sense. So Calhoun listened politely until he found an undistinguished medical man who wanted some special information about gene-selection as practised halfway across the galaxy. He invited that man to the Med Ship, where he supplied the information not hitherto

available. He saw his guest's eyes shine a little with that joyous awe a man feels when he finds out something he has wanted long and badly to know.

"Now," said Calhoun," tell me something! Why does everybody on this planet hate the inhabitants of Dara? It's light-years away. Nobody claims to have suffered in person from them. Why make a point of hating them?"

The Wealdian doctor grimaced.

"They've blue patches on their skins. They're different from us. So they can be pictured as a danger and our political parties can make an election issue out of competing for the privilege of defending us from them. They had a plague on Dara, once. They're accused of still having it ready for export."

"Hm," said Calhoun. "The story is that they want to spread contagion here, eh? Doesn't anybody"—his tone was sardonic—"doesn't anybody urge that they be massacred as an act of piety?"

"Yes-s-s-s," admitted the doctor reluctantly. "It's mentioned in political speeches."

"But how's it rationalized?" demanded Calhoun. "What's the argument to make pigment-patches involve moral and physical degradation, as I'm assured is the case?"

"In the public schools," said the doctor, "the children are taught that blueskins are now

carriers of the disease they survived three generations ago! That they hate everybody who isn't a blueskin. That they are constantly scheming to introduce their plague here so most of us will die and the rest become blueskins. That's beyond rationalizing. It can't be true, but it's not safe to doubt it."

"Bad business," said Calhoun coldly. "That sort of thing usually costs lives, in the end. It could lead to massacre!"

"Perhaps it has, in a way," said the doctor unhappily. "One doesn't like to think about it." He paused, and said; "Twenty years ago there was a famine on Dara. There were crop-failures. The situation must have been very bad. They built a space-ship. They've no use for such things normally, because no nearby planet will deal with them or let them land. But they built a space-ship and came here. They went in orbit around Weald. They asked to trade for shiploads of food. They offered any price in heavy metals, gold, platinum, irridium, and so on. They talked from orbit by vision communicators. They could be seen to be blue-skins. You can guess what happened!"

"Tell me," said Calhoun.

WE armed ships in a hurry," admitted the doctor, "We chased their space-ship back to



Dara. We hung in space off the planet. We told them we'd blast their world from pole to pole if they ever dared take to space again. We made them destroy their one ship, and we watched on vision-screens as it was done."

"But you gave them food?"

"No," said the doctor ashamedly. "They were blueskins."

"How bad was the famine?"

"Who knows? Any number may have starved! And we kept a squadron of armed ships in their skies for years. To keep them from spreading the plague, we said. And some of us believed it, probably!"

The doctor's tone was purest irony.

"Lately," he said, "there's been a move for economy in our government. Simultaneously, we began to have a series of over-abundant crops. The government had to buy the excess grain to keep the price up. Retired patrol-ships—built to watch over Dara—were available for storage-space. We filled them up with grain and sent them out into orbit. They're there now, hundreds of thousands or millions of tons of grain!"

"And Dara?"

The Doctor shrugged. He stood up.

"Our hatred of Dara," he said, again ironically, "has produced one thing. Roughly halfway between here and Dara there's a

two-planet solar system, Orede. There's a usable planet there. It was proposed to build an outpost of Weald there, against blueskins. Cattle were landed to run wild and multiply and make a reason for colonists to settle there. They did, but nobody wants to move nearer to blueskins! So Orede stayed uninhabited until a hunting-party shooting wild cattle found an outcropping of heavy-metal ore. So now there's a mine there. And that's all. A few hundred men work the mine at fabulous wages. You may be asked to check on their health. But not Dara's!"

"I see," said Calhoun, frowning.

The doctor moved toward the Med Ship's exit-port.

"I answered your questions," he said grimly. "But if I talked to anyone else as I've done to you, I'd be lucky only to be driven into exile!"

"I shan't give you away," said Calhoun. He did not smile.

When the doctor had gone, Calhoun said deliberately;

"Murgatroyd, you should be grateful that you're a *tormal* and not a man. There's nothing about being a *tormal* to make you ashamed!"

Then he grimly changed his garments for the full-dress uniform of the Med Service. There was to be a banquet at which he would sit next to the planet's

chief executive and hear innumerable speeches about the splendor of Weald. Calhoun had his own, strictly Med Service opinion of the planet's latest and most boasted-of achievement. It was a domed city in the polar regions, where nobody ever had to go outdoors. He was less than professionally enthusiastic about the moving streets, and much less approving of the dream-broadcasts which supplied hypnotic, sleep-inducing rhythms to anybody who chose to listen to them. The price was that while asleep one would hear high praise of commercial products, and one might believe them when awake.

But it was not Calhoun's function to criticize when it could be avoided. Med Service had been badly managed in Sector Twelve. So at the banquet Calhoun made a brief and diplomatic address in which he temperately praised what could be praised, and did not mention anything else.

The chief executive followed him. As head of the government he paid some tribute to the Med Service. But then he reminded his hearers proudly of the high culture, splendid health, and remarkable prosperity of the planet since his political party took office. This, he said, was in spite of the need to be perpetually on guard against the greatest and most immediate danger to which any world in all the galaxy was

exposed. He referred to the blueskins, of course. He did not need to tell the people of Weald what vigilance, what constant watchfulness was necessary against that race of depraved and malevolent deviants from the norm of humanity. But Weald, he said with emotion, held aloft the torch of all that humanity held most dear, and defended not alone the lives of its people against blueskin contagion, but their noble heritage of ideals against Blueskin pollution.

When he sat down, Calhoun said very politely;

"It looks like some day it should be practical politics to urge the massacre of all blueskins. Have you thought of that?"

The chief executive said comfortably;

"The idea's been proposed. It's good politics to urge it, but it would be foolish to carry it out. People vote against blueskins. Wipe them out, and where'd you be?"

Calhoun ground his teeth, quietly.

THERE were more speeches. Then a messenger, white-faced, arrived with a written note for the chief executive. He read it and passed it to Calhoun. It was from the Ministry of Health. The space-port reported that a ship had just broken out

from overdrive within the Wealdian solar system. Its tape-transmitter had automatically signalled its arrival from the mining-planet Orede. But, having sent off its automatic signal, the ship lay dead in space. It did not drive toward Weald. It did not respond to signals. It drifted like a derelect upon no course at all. It seemed ominous, and since it came from Orede—the planet nearest to Dara of the blueskins—the health ministry informed the planet's chief executive.

"It'll be blueskins," said that astute person, firmly. "They're next-door to Orede. That's who's done this. It wouldn't surprise me if they'd seeded Orede with their plague, and this ship came from there to give us warning!"

"There's no evidence for anything of the sort," protested Calhoun. "A ship simply came out of overdrive and didn't signal further. That's all."

"We'll see," said the chief executive ominously. "We'll go directly to the spaceport."

Calhoun retrieved Murgatroyd who had been visiting with the wives of the higher-up officials. His small paunch distended with cakes and coffee and such delicacies as he'd been plied with. He was half comatose from overfeeding and over-petting, but he was glad to see Calhoun. At the spaceport they discovered the situation remained unchanged.

A ship from Orede had come out of overdrive and lay dead in emptiness. It did not answer calls. It did not move in space. It floated eerily in no orbit around anything, going nowhere; doing nothing. And panic was the consequence.

It seemed to Calhoun that the official handling of the matter accounted for the terror that he could feel building up. The so-far-unexplained bit of news was on the air all over the planet Weald. There was nobody awake of all the world's population who did not believe that there was a new danger in the sky. Nobody doubted that it came from blueskins. The treatment of the news was precisely calculated to keep alive the hatred of Weald for the inhabitants of the world Dara.

Calhoun put Murgatroyd into the Med Ship and went back to the spaceport office. A small space-boat, designed to inspect the circling grain-ships from time, was already aloft. The landing-grid had thrust it swiftly out most of the way. Now it droned and drove on sturdily toward the enigmatic ship.

Calhoun took no part in the agitated conferences among the officials and news reporters at the spaceport. But he listened to the talk about him. As the investigating small ship drew nearer and nearer to the deathly-still cargo vessel, the guesses about

the meaning of its breakout and following silence grew more and more wild. But, singularly, there was not one suggestion that the mystery might not be the work of blueskins. Blueskins were scapegoats for all the fears and all the uneasiness a perhaps over-civilized world developed.

Presently the investigating space-boat reached the mystery ship and circled it, beaming queries. No answer. It reported the cargo-ship dark. No lights shone anywhere on or in it. There were no induction-surges from even pulsing, idling engines. Delicately, the messenger-craft maneuvered until it touched the silent vessel. It reported that microphones detected no motion whatever inside.

"Let a volunteer go aboard," commanded the chief executive. "Have him report what he finds."

A pause. Then the solemn announcement of an intrepid volunteer's name, from far, far away. Calhoun listened, frowning darkly. This pompous heroism wouldn't be noticed in the Med Service. It would be routine behavior.

Suspenseful, second-by-second reports. The volunteer had rocketed himself across the emptiness between the two again-separated ships. He had opened the airlock from outside. He'd gone in. He'd closed the outer airlock door. He'd opened the inner. He reported.

The relayed report was, almost incoherent, what with horror and incredulity and the feeling of doom that came upon the volunteer. The ship was a bulk-cargo ore-carrier, designed to run between Orede and Weald with cargoes of heavy-metal ores and a crew of no more than five men. There was no cargo in her holds now, though. Instead, there were men. They packed the ship. They filled the corridors. They had crawled into every cargo and other space where a man could find room to push himself. There were hundreds of them. It was insanity. And it had been greater insanity still for the ship to have taken off with so preposterous a load of living creatures.

But they weren't living any longer. The air apparatus had been designed for a crew of five. It could purify the air for possibly twenty or more. But there were hundreds of men in hiding as well as in plain view in the cargo-ship from Orede. There were many, many times more than her air apparatus and reserve tanks could possibly have serviced. They couldn't even have been fed during the journey from Orede to Weald!

But they hadn't starved. Air-scarcity killed them before the ship came out of overdrive.

A remarkable thing was that there was no written message in the ship's log which referred to

its take-off. There was no memorandum of the taking on of such an impossible number of passengers.

"The blueskins did it," said the chief executive of Weald. He was pale. All about Calhoun men looked sick and shocked and terrified. "It was the blueskins! We'll have to teach them a lesson!" Then he turned to Calhoun. "The volunteer who went on that ship . . . He'll have to stay there, won't he? He can't be brought back to Weald without bringing contagion . . ."

Calhoun raged at him.

#### CHAPTER 2

THERE was a certain coldness in the manner of those at the Weald spaceport when the Med Ship left next morning. Calhoun was not popular because Weald was scared. It had been conditioned to scare easily, where blueskins might be involved. Its children were trained to react explosively when the word "blueskin" was uttered in their hearing, and its adults tended to say "blueskin" when anything to cause uneasiness entered their minds. So a planet-wide habit of non-rational response had formed and was not seen to be irrational because almost everybody had it.

The volunteer who'd discovered the tragedy on the ship from Orede was safe, though. He'd

made a completely conscientious survey, of the ship he'd volunteered to enter and examine. For his courage, he'd have been doomed but for Calhoun. The reaction of his fellow-citizens was that by entering the ship he might have become contaminated by blueskin infective material if the plague still existed, and if the men in the ship had caught it—but they certainly hadn't died of it—and if there had been blueskins on Orede to communicate it—for which there was no evidence—and if blueskins were responsible for the tragedy. Which was at the moment pure supposition. But Weald feared he might bring death back to Weald if he were allowed to return.

Calhoun saved his life. He ordered that the guard-ship admit him to its air-lock, which then was to be filled with steam and chlorine. The combination would sterilize and partly even eat away his space-suit, after which the chlorine and steam should be bled out to space, and air from the ship let into the lock. If he stripped off the space-suit without touching its outer surface, and reentered the investigating ship while the suit was flung outside by a man in another space-suit, handling it with a pole he'd fling after it, there could be no possible contamination brought back.

Calhoun was quite right, but



Weald in general considered that he'd persuaded the government to take an unreasonable risk.

There were other reasons for disapproving of him. Calhoun had been unpleasantly frank. The coming of the death-ship stirred to frenzy those people who believed that all blueskins should be exterminated as a pious act. They'd appeared on every vision-screen, citing not only the ship from Orede but other incidents which they interpreted as crimes against Weald. They demanded that all Wealdian atomic reactors be modified to turn out fusion-bomb materials while a space-fleet was made ready for an anti-blueskin crusade. They confidently demanded such a rain of fusion-bombs on Dara that no blueskin, no animal, no shred of vegetation, no fish in the deepest ocean, not even a living virus-particle of the blueskin plague could remain alive on the blueskin world!

One of these vehement orators even asserted that Calhoun agreed that no other course was possible, speaking for the Interstellar Medical Service. And Calhoun furiously demanded a chance to deny it by broadcast, and he made a bitter and indiscreet speech from which a planet-wide audience inferred that he thought them fools. He did.

So he was definitely unpopular when his ship lifted from Weald.

He'd curtly given his destination as Orede, from which the death-ship had come. The landing-grid locked on, raised the small spacecraft until Weald was a great shining ball below it, and then somehow scornfully cast him off. The Med Ship was free, in clear space where there was not enough of a gravitational field to hinder overdrive.

He aimed for his destination, his face very grim. He said savagely;

"Get set, Murgatroyd! Overdrive coming!"

HE thumbed down the overdrive button. The universe of stars went out, while everything living in the ship felt the customary sensations of dizziness, of nausea, and of a spiralling fall to nothingness. Then there was silence. The Med Ship actually moved at a rate which was a preposterous number of times the speed of light, but it felt absolutely solid; absolutely firm and fixed. A ship in overdrive feels exactly as if it were buried deep in the core of a planet. There is no vibration. There is no sign of anything but solidity and—if one looks out a port—there is only utter blackness plus an absence of sound fit to make one's eardrums crack.

But within seconds random tiny noises began. There was a reel and there were sound-speak-

ers to keep the ship from sounding like a grave. The reel played and the speakers gave off minute creakings, and meaningless hums, and very tiny noises of every imaginable sort, all of which were just above the threshold of the inaudible.

Calhoun fretted. Sector Twelve was in very bad shape. A conscientious Med Service man would never have let the anti-blueskin obsession go unmentioned in a report on Weald. Health is not only a physical affair. There is mental health, also. When mental health goes a civilization can be destroyed more surely and more terribly than by any imaginable war or plague-germ. A plague kills off those who are susceptible to it, leaving immunes to build up a world again. But immunes are the first to be killed when a mass neurosis sweeps a population.

Weald was definitely a Med Service problem world. Dara was another. And when hundreds of men jammed themselves into a cargo-boat which could not furnish them with air to breathe, and took off and went into overdrive before the air could fail. . . . Orede called for no less of worry.

"I think," said Calhoun dourly, "that I'll have some coffee."

"Coffee" was one of the words that Murgatroyd recognized immediately. He would usually

watch the coffee-maker with bright, interested eyes. He'd even tried to imitate Calhoun's motions with it, once, and had scorched his paws in the attempt. This time he did not move.

Calhoun turned his head. Murgatroyd sat on the floor, his long tail coiled reflectively about a chair-leg. He watched the door of the Med Ship's sleeping-cabin.

"Murgatroyd," said Calhoun. "I mentioned coffee!"

"*Chee!*" shrilled Murgatroyd.

But he continued to look at the door. The temperature was kept lower in the other cabin, and the look of things was different from the control-compartment. The difference was part of the means by which a man was able to be alone for weeks on end—alone save for his *tormal*—without becoming ship-happy. There were other carefully thought out items in the ship with the same purpose. But none of them should cause Murgatroyd to stare fixedly and fascinatedly at the sleeping-cabin door. Not when coffee was in the making!

Calhoun considered. He became angry at the immediate suspicion that occurred to him. As a Med Service man, he was duty-bound to be impartial. To be impartial might mean not to side absolutely with Weald in its enmity to blueskins. The people of Weald had refused to help Dara in a time of famine; they'd block-

aded that pariah world for years afterward; they had other reasons for hating the people they'd treated badly. It was entirely reasonable for some fanatic on Weald to consider that Calhoun must be killed lest he be of help to the blueskins Weald abhorred.

In fact, it was quite possible that somebody had stowed away on the Med Ship to murder Calhoun, so that there would be no danger of any report favorable to Dara ever being presented anywhere. If so, such a stowaway would be in the sleeping-cabin now, waiting for Calhoun to walk unobscurely in to be shot dead.

So Calhoun made coffee. He slipped a blaster into a pocket where it would be handy. He filled a small cup for Murgatroyd and a large one for himself, and then a second large one.

He tapped on the sleeping-cabin door, standing aside lest a blaster-bolt came through it.

"Coffee's ready," he said sardonically. "Come out and join us."

There was a long pause. Calhoun rapped again.

"You've a seat at the captain's table," he said more sardonically still. "It's not polite to keep me waiting!"

HE listened, alert for a rush which would be a fanatic's desperate attempt to do murder despite premature discovery. He

was prepared to shoot quite ruthlessly.

But there was no rush. Instead, there came hesitant foot-falls. The door of the cabin slid slowly aside. A girl appeared in the opening, desperately white and desperately composed.

"H-how did you know I was there?" she asked shakily. She moistened her lips. "You didn't see me! I was in a closet, and you didn't even enter the room!"

Calhoun said grimly;

"I've sources of information. He pointed to Murgatroyd.

The girl did not move. Her eyes went from Murgatroyd to Calhoun.

"And now," said Calhoun, "do you want to tell me your story? You have one ready, I'm sure."

"There—there isn't any," said the girl unsteadily. "Just—I—I need to get to Orede, and you're going there. There's no other way to go—now."

"To the contrary," said Calhoun, "there'll undoubtedly be a fleet heading for Orede as soon as it can be assembled and armed. But I'm afraid that's not a very good story. Try another."

She shivered a little.

"I'm—running away . . ."

"Ah!" said Calhoun. "In that case I'll take you back."

"No!" she said fiercely. "I'll—I'll die first! I'll wreck this ship first!"

Her hand came from behind

her. There was a tiny blaster in it. But it shook visibly as she tried to aim it.

"I'll—shoot out the controls!"

Calhoun blinked. He'd had to make a drastic change in his estimate of the situation the instant he saw that the stowaway was a girl. Now he had to make another when her threat was not to kill him but to disable the ship. Women are rarely assassins, and when they are they don't use energy weapons. Daggers and poisons are more typical.

"I'd rather you didn't do that," said Calhoun drily. "Besides, you'd get deadly bored if we were stuck in a derelect waiting for our air and food to give out."

Murgatroyd, for no reason whatever, felt it necessary to enter the conversation. He said;

"Chee-chee-chee!"

"A very sensible suggestion," observed Calhoun. "We'll sit down and have a cup of coffee." To the girl he said, "I'll take you to Orede, since that's where you say you want to go."

"I—there's a boy there—"

Calhoun shook his head.

"No," he said reprovingly. "Nearly all the mining colony had packed itself into the ship that came into Weald with everybody dead. But not all. And there's been no check of what men were in the ship and what men weren't. You wouldn't go to Orede if it were likely your fel-

low had died on the way to you. Here's your coffee. Sugar or saccho, and do you take cream?"

She trembled a little, but she took the cup.

"I—don't understand—"

"Murgatroyd and I," explained Calhoun—and he did not know whether he spoke out of anger or something else—"we are do-gooders. We go around trying to keep people from getting killed. It's our profession. We practise it even on our own behalf. We want to stay alive. So since you make such drastic threats, we will take you where you want to go. Especially since we're going there anyhow."

"You—don't believe anything I've said!" It was a statement.

"Not a word," admitted Calhoun. "But you'll probably tell us something more believable presently. When did you eat last?"

"Yesterday—"

"Better have something now. We'll talk more later." Calhoun showed her how to punch the readier for such-and-such dishes, to be extracted from storage and warmed or chilled, as the case might be, and served at dialed-for intervals.

CALHOUN deliberately immersed himself in the Galactic Directory, looking up the planet Orede. He was headed there, but he'd had no reason to inform himself about it before. Now he

read with every appearance of absorption.

The girl ate daintily. Murgatroyd watched with highly amiable interest. But she looked acutely uncomfortable.

Calhoun finished with the Directory. He got out the microfilm reels which contained more information. He was specifically after the Med Service history of all the planets in this sector. He went through the filmed record of every inspection ever made on Weald and on Dara. But Sector Twelve had not been well-run. There was no adequate account of a plague which had wiped out three-quarters of the population of an inhabited planet! It had happened shortly after one Med Ship visit, and was over before another Med Ship came by. But there should have been painstaking investigation, even after the fact. There should have been a collection of infective material and a reasonably complete identification and study of the infective agent. It hadn't been made. There was probably some other emergency at the time, and it slipped by. But Calhoun—whose career was not to be spent in this sector—resolved on a blistering report about this negligence and its consequences.

He kept himself casually busy, ignoring the girl. A Med Ship man has resources of study and meditation with which to occupy

himself during overdrive travel from one planet to another. Calhoun made use of those resources. He acted as if he were completely unconscious of the stowaway. But Murgatroyd watched her with charmed attention.

Hours after her discovery, she said uneasily;

"Please?"

Calhoun looked up.

"Yes?"

"I—don't know exactly how things stand."

"You are a stowaway," said Calhoun. "Legally, I have the right to put you out the airlock. It doesn't seem necessary. There's a cabin. When you're sleepy, use it. Murgatroyd and I can make out quite well here. When you're hungry, you now know how to get something to eat. When we land on Orede, you'll probably go about whatever business you have there. That's all."

She stared at him.

"But—you don't believe what I've told you!"

"No," agreed Calhoun. But he didn't add to the statement.

"But—I will tell you," she offered. "The police were after me. I had to get away from Weald! I had to! I'd stolen—"

He shook his head.

"No," he said. "If you were a thief, you'd say anything in the world except that you were a thief. You're not ready to tell the truth yet. You don't have to, so

why tell me anything? I suggest that you get some sleep."

She rose slowly. Twice her lips parted as if to speak again, but then she went into the other cabin and closed herself in.

Murgatroyd blinked at the place where she'd disappeared and then climbed up into Calhoun's lap, with complete assurance of welcome. He settled himself and was silent for moments. Then he said;

"Chee!"

"I believe you're right," said Calhoun. "She doesn't belong on Weald, or with the conditioning she'd have had, there'd be only one place she'd dread worse than Orede, and that would be Dara. But I doubt she'd be afraid to land even on Dara."

Murgatroyd liked to be talked to. He liked to pretend that he carried on a conversation, like humans.

"Chee-chee!" he said with conviction.

"Definitely," agreed Calhoun. "She's not doing this for her personal advantage. Whatever she thinks she's doing, it's more important to her than her own life. Murgatroyd—"

"Chee?" said Murgatroyd in an inquiring tone.

"There are wild cattle on Orede," said Calhoun. "Herds and herds of them. I have a suspicion that somebody's been shooting them. Lots of them. Do

you agree? Don't you think that a lot of cattle have been slaughtered on Orede lately?"

Murgatroyd yawned. He settled himself still more comfortably in Calhoun's lap.

"Chee," he said drowsily.

He went to sleep, while Calhoun continued the examination of highly condensed information. Presently he looked up the normal rate of increase, with other data, among herds of *bivis domesticus* in a wild state, on planets where they have no natural enemies. It wasn't unheard-of for a world to be stocked with useful types of Terran fauna and flora before it was attempted to be colonized. Terran life-forms could play the devil with alien ecological systems, very much to humanity's benefit. Familiar microorganisms and a standard vegetation added to the practicality of human settlements on otherwise alien worlds. But sometimes the results were strange.

They weren't often so strange, however, as to cause some hundreds of men to pack themselves frantically aboard a cargo-ship which couldn't possibly sustain them, so that every man must die while the ship was in overdrive.

Still, by the time Calhoun turned in on a spare pneumatic mattress, he had calculated that as few as a dozen head of cattle, turned loose on a suitable planet, would have increased to herds of



thousands or tens or even hundreds of thousands in much less time than had probably elapsed.

The Med Ship drove on in seemingly absolute solidity, with no sound from without, with no sight to be seen outside, with no evidence at all that it was not buried deep in the heart of a planet instead of flashing through emptiness at a speed so great as to have no meaning.

NEXT ship-day the girl looked oddly at Calhoun when she appeared in the control-room. "Shall I—have breakfast?" she asked uncertainly.

"Why not?"

Silently, she operated the food-reader. She ate. Calhoun gave the impression that he would respond politely when spoken to, but that he was busy with activities that kept him remote from stowaways.

About noon, ship-time, she asked;

"When will we get to Orede?"

Calhoun told her absently, as if he were thinking of something else.

"What—what do you think happened there? I mean, to make that tragedy in the ship?"

"I don't know," said Calhoun. "But I disagree with the authorities on Weald. I don't think it was a planned atrocity of the blueskins."

"Wh-what are blueskins?"

Calhoun turned around and looked at her directly.

"When lying," he said mildly, "you tell as much by what you pretend isn't, as by what you pretend is. You know what blueskins are!"

"B—but what do you think they are?" she asked.

"There used to be a human disease called smallpox," said Calhoun. "When people recovered from it, they were usually marked. Their skin had little scar-pits here and there. At one time, back on Earth, it was expected that everybody would catch smallpox sooner or later, and a large percentage would die of it. And it was so much a matter of course that if they printed a description of a criminal, they never mentioned it if he were pock-marked—scarred. It was no distinction. But if he didn't have the markings, they'd mention that!" He paused. "Those pock-marks weren't hereditary, but otherwise a blueskin is like a man who had them. He can't be anything else!"

"Then you think they're—human?"

"There's never yet been a case of reverse evolution," said Calhoun. "Maybe pithecanthropus had a monkey uncle, but no pithecanthropus ever went monkey."

She turned abruptly away. But she glanced at him often during that day. He continued to busy

himself with those activities which make a Med Ship man's life consistent with retained sanity.

Next day she asked without preliminary;

"Don't you believe the blueskins planned for the ship with the dead men to arrive at Weald and spread plague there?"

"No," said Calhoun.

"Why?"

"It couldn't possibly work," Calhoun told her. "With only dead men on board, the ship wouldn't arrive at a place where the landing-grid could bring it down. So that would be no good. And plague-stricken living men wouldn't try to conceal that they had the plague. They might ask for help, but they'd know they'd instantly be killed on Weald if they were found to be plague-victims. So that would be no good, either! No, the ship wasn't intended to land plague on Weald."

"Are you—friendly to blueskins?" she asked uncertainly.

"Within reason," said Calhoun, "I am a well-wisher to all the human race. You're slipping, though. When using the word 'blueskin' you should say it uncomfortably, as if it were a word no refined person liked to pronounce. You don't. We'll land on Orede tomorrow, by the way. If you ever intend to tell me the truth, there's not much time."

She bit her lips. Twice, during the remainder of the day, she faced him and opened her mouth as if to speak, and then turned away again. Calhoun shrugged. He had fairly definite ideas about her, by now. He carefully kept them tentative, but no girl born and raised on Weald would willingly go to Orede, with all of Weald believing that a shipload of miners preferred death to remaining there. It tied in, like everything else that was unpleasant, to blueskins. Nobody from Weald would dream of landing on Orede! Not now!

A LITTLE before the Med Ship was due to break out from overdrive, the girl said very carefully;

"You've been—very kind. I'd like to thank you. I—didn't really believe I would—live to get to Orede."

Calhoun raised his eyebrows.

"I—wish I could tell you everything you want to know," she added regretfully. "I think you're—really decent. But some things. . . ."

Calhoun said caustically;

"You've told me a great deal. You weren't born on Weald. You weren't raised there. The people of Dara—notice that I don't say blueskins, though they are—the people of Dara have made at least one space-ship since Weald threatened them with extermina-

tion. There is probably a new food-shortage on Dara now, leading to pure desperation. Most likely it's bad enough to make them risk landing on Orede to kill cattle and freeze beef to help. They've worked out."

She gasped and sprang to her feet. She snatched out the tiny blaster in her pocket. She pointed it waveringly at him.

"I—have to kill you!" she cried desperately. "I—I have to!"

Calhoun reached out. She tugged despairingly at the blaster's trigger. Nothing happened. Before she could realize that she hadn't turned off the safety. Calhoun twisted the weapon from her fingers. He stepped back.

"Good girl!" he said approvingly. "I'll give this back to you when we land. And thanks. Thanks very much!"

She stared at him. "Thanks? When I tried to kill you?"

"Of course!" said Calhoun. "I'd made guesses. I couldn't know that they were right. When you tried to kill me, you confirmed every one. Now, when we land on Orede I'm going to get you to try to put me in touch with your friends. It's going to be tricky, because they must be pretty well scared about that ship. But it's a highly desirable thing to get done!"

He went to the ship's control-board and sat down before it.

"Twenty minutes to break-hour," he observed.

Murgatroyd peered out of his little cubbyhole. His eyes were anxious. *Tormals* are amiable little creatures. During the days in overdrive, Calhoun had paid less than the usual amount of attention to Murgatroyd, while the girl was fascinating. They'd made friends, awkwardly on the girl's part, very pleasantly on Murgatroyd's. But only moments ago there had been bitter emotion in the air. Murgatroyd had fled to his cubbyhole to escape it. He was distressed. Now that there was silence again, he peered out unhappily.

"Chee?" he queried plaintively. "Chee-chee-chee?"

Calhoun said matter-of-factly;

"It's all right, Murgatroyd. If we aren't blasted as we try to land, we should be able to make friends with everybody and get something accomplished."

The statement was hopelessly inaccurate.

### CHAPTER 3

THERE was no answer from the ground when breakout came and Calhoun drove the Med Ship to a favorable position for a call. He patiently repeated, over and over again, that Med Ship Aesclepius Twenty notified its arrival and requested coordi-

nates for landing. There should have been a crisp description of the direction from the planet's center at which, a certain time so many hours or minutes later, the force-fields of the grid would find it convenient to lock onto and lower the Med Ship. But the communicator remained silent.

"There is a landing-grid," said Calhoun, frowning," and if they're using it to load fresh meat for Dara, from the herds I'm told about, it should be manned. But they don't seem to intend to answer. Maybe they think that if they pretend I'm not here I'll go away."

He reflected, and his frown deepened.

"If I didn't know what I do know, I might. So if I land on emergency-rockets the blueskins down below may decide that I come from Weald. And in that case it would be reasonable to blast me before I could land and unload some fighting men. On the other hand, no ship from Weald would conceivably land without impassioned assurance that it was safe. It would drop bombs." He turned to the girl. "How many Darians down below?"

She shook her head.

"You don't know," said Calhoun, "or won't tell, yet. But they ought to be told about the arrival of that ship at Weald, and what Weald thinks about it! My guess is that you came to tell them. It

isn't likely that Dara gets news direct from Weald. Where were you put ashore from Dara, when you set out to be a spy?"

Her lips parted to speak. But she compressed them tightly. She shook her head again.

"It must have been plenty far away," said Calhoun restlessly. "Your people would have built a ship, and made fine forged papers for it, and they'd travel so far from this part of space that when they landed nobody would think of Dara. They'd use make-up to cover the blue spots, but maybe it was so far away that blueskins had never been heard of!"

Her face looked pinched, but she did not reply.

"Then they'd land half a dozen of you, with a supply of makeup for the blue patches. And you'd separate, and take ships that went various roundabout ways, and arrive on Weald one by one, to see what could be done there to. . . ." He stopped. "When did you find out: positively that there wasn't any plague any more?"

She began to grow pale.

"I'm not a mind-reader," said Calhoun. "But it adds up. You're from Dara. You've been on Weald. It's practically certain that there are other, agents, if you like that word better, on Weald. And there hasn't been a plague on Weald so you people aren't carriers of it. But you

knew it in advance, I think. How'd you learn? Did a ship in some sort of trouble land there, on Dara?"

"Y-yes," said the girl. "We wouldn't let it go again. But the people didn't catch—they didn't die—they lived—."

She stopped short.

"It's not fair to trap me!" she cried passionately, "It's not fair!"

"I'll stop," said Calhoun.

He turned to the control-board. The Med Ship was only planetary diameters from Orede, now, and the electron telescope showed shining stars in leisurely motion across its screen. Then a huge, gibbous shining shape appeared, and there were irregular patches of that muddy color which is seabottom, and varicolored areas which were plains and forests. Also there were mountains. Calhoun steadied the image and squinted at it.

"The mine," he observed, "was found by members of a hunting-party, killing wild cattle for sport."

**E**VEN a small planet has many millions of square miles of surface, and a single human installation on a whole world will not be easy to find by random search. But there were clues to this one. Men hunting for sport would not choose a tropic nor an arctic climate to hunt in. So if

they found a mineral deposit, it would have been in a temperate zone. Cattle would not be found deep in a mountainous terrain. The mine would not be on a prairie. The settlement on Orede, then, would be near the edge of mountains, not far from a prairie such as wild cattle would frequent, and it would be in a temperate climate. Forested areas could be ruled out. And there would be a landing-grid. Handling only one ship at a time, it might be a very small grid. It need be only hundreds of yards across and less than half a mile high. But its shadow would be distinctive.

Calhoun searched among low mountains near unforested prairie in a temperate zone. He found a speck. He enlarged it manyfold, and it was the mine on Orede. There were heaps of tailings. There was something which cast a long, lacy shadow. The landing-grid.

"But they don't answer our call," observed Calhoun, "so we go down unwelcomed."

He inverted the Med Ship and the emergency-rockets boomed. The ship plunged planetward.

A long time later it was deep in the planet's atmosphere. The noise of its rockets had become thunderous, with air to carry and to reinforce the sound.

"Hold on to something, Murgatroyd," commanded Calhoun.

"We may have to dodge some ack."

But nothing came up from below. The Med Ship again inverted itself, and its rockets pointed toward the planet and poured out pencil-thin, blue-white, high-velocity flames. It checked slightly, but continued to descend. It was not directly above the grid. It swept downward until almost level with the peaks of the mountains in which the mine lay. It tilted again, and swept onward over the mountain-tops, and then tilted once more and went racing up the valley in which the landing-grid was plainly visible. Calhoun swung it on an erratic course, lest there be opposition.

But there was no sign. Then the rockets bellowed, and the ship slowed its forward motion, hovered momentarily, and settled to solidity outside the framework of the grid. The grid was small, as Calhoun reasoned. But it reached interminably toward the sky.

The rocket cut off. Slender as the flame had been, they'd melted and bored thin drill-holes deep into the soil. Molten rock boiled and bubbled down below. But there seemed no other sound. There was no other motion. There was absolute stillness all around. But when Calhoun switched on the outside microphones a faint, sweet melange of high-pitched chirpings came from tiny crea-

tures hidden under the vegetation of the mountainsides.

Calhoun put a blaster in his pocket and stood up.

"We'll see what it looks like outside," he said with a certain grimness. "I don't quite believe what the vision-screens show."

MINUTES later he stepped down to the ground from the Med Ship's exit-port. The ship had landed perhaps a hundred feet from what once had been a wooden building. In it, ore from the mines was concentrated and the useless tailings carried away by a conveyor-belt to make a monstrous pile of broken stone. But there was no longer a building. Next to it there had been a structure containing an ore-crusher. The massive machinery could still be seen, but the structure was fragments. Next to that, again, had been the shaft-head shelters of the mine. They also were shattered practically to match-sticks.

The look of the ground about the building-sites was simply and purely impossible. It was a mass of hoofprints. Cattle by thousands and tens of thousands had trampled everything. Cattle had burst in the wooden sides of the buildings. Cattle had piled themselves up against the beams upholding roofs until the buildings collapsed. Then cattle had gone plunging over the wrecked



buildings until there was nothing left but indescribable chaos. Many, many cattle had died in the crush. There were heaps of dead beasts about the metal girders which were the foundation of the landing-grid. The air was tainted by the smell of carrion.

The settlement had been destroyed, positively, by stampeded cattle in tens or hundreds of thousands charging blindly through and over and upon it. Senselessly, they'd trampled each other to horrible shapelessnesses. The mine-shaft was not choked, because enormously strong timbers had fallen across and blocked it. But everything else was pure destruction.

Calhoun said evenly;

"Clever! Very clever! You can't blame men when beasts stampede! We should accept the evidence that some monstrous herd, making its way through a mountain pass, somehow went crazy and bolted for the plains and this settlement got in the way and it was too bad for the settlement. Everything's explained, except the ship that went to Weald. A cattle stampede, yes. Anybody can believe that! But there was a man-stampede! Men stampeded into the ship as blindly as the cattle trampled down this little town. The ship stampeded off into space as insanely as the cattle. But a stampede of men *and* cattle, in the same place,—that's

a little too much at one time!"

"How," asked Calhoun directly, "do you intend to get in touch with your friends here?"

"I—I don't know," she said distressedly. "But if—the ship stays here, they're bound to come and see why. Won't they? Or will they?"

"If they're sane, they won't," said Calhoun. "The one undesirable thing, here, would be human footprints on top of cattle-tracks. If your friends are a meat-getting party from Dara, as I believe, they should cover up their tracks, get off-planet as fast as possible, and pray that no signs of their former presence are ever discovered. That would be their best first move, certainly!"

"What should I do?" she asked helplessly.

"I'm far from sure. At a guess, and for the moment, probably nothing. I'll work something out . . . I've got the devil of a job before me, though. I can't spend too much time here."

"You can—leave me here. . . ."

He grunted and turned away. It was naturally unthinkable that he should leave another human being on a supposedly uninhabited planet, with the knowledge that it might actually be uninhabited, and the further knowledge that any visitors would have the strongest of possible reasons to hide themselves away.

He believed that there were

Darians here, and the girl in the Med ship—so he also believed—was a Darian. But any who might be hiding had so much to lose if they were discovered that they might be hundreds or even thousands of miles from anywhere a space-ship would normally land—if they hadn't fled after the incident of the space-ship's departure with its load of doomed passengers.

Considered detachedly, the odds were that there was again a food-shortage on Dara. That blueskins, in desperation, had raided or were raiding or would raid the cattle-herds of Orede for food to carry back to their home planet. That somehow the miners on Orede had found that they had blueskin neighbors, and died of the consequences of their terror. It was a risky guess to make on such evidence as Calhoun considered he had, but no other guess was possible.

If his guess was right, he was under some obligation to do exactly what he believed the girl considered her mission, to warn all blueskins that Weald would presently try to find them on Orede, when all hell must break loose upon Dara for punishment. But if there were men here, he couldn't leave a written warning for them in default of friendly contact. They might not find it, and a search-party of Wealdians might. All he could possibly do

was try to make contact and give warning by such means as would leave no evidence behind that he'd done so. Weald would consider a warning sure proof of blueskin guilt.

It was not satisfactory to be limited to broadcasts which might not be picked up, and were unlikely to be acknowledged. But he settled down with the communicator to make the attempt.

HE called first on a GC wavelength and form. It was unlikely that blueskin would use general-communication bands to keep in touch with each other, but it had to be tried. He broadcast, as broadly tuned as possible, and went up and down the GC spectrum, repeating his warning painstakingly and listening without hope for a reply. He did find one spot on the dial where there was re-radiation of his message, as if from a tuned receiver. But he could not get a fix on it, and nobody might be listening. He exhausted the normal communication pattern. Then he broadcast on old-fashioned amplitude modulation which a modern communicator would not pick up at all, and which therefore might be used by men in hiding.

He worked for a long time. Then he shrugged and gave it up. He'd repeated to absolute tedium the facts that any Darians—blueskins—on Orede ought to

know. There'd been no answer. And it was all too likely that if he'd been received, that those who heard him took his message for a trick to discover if there were any hearers.

He clicked off at last and stood up, shaking his head. Suddenly the Med Ship seemed empty. Then he saw Murgatroyd staring at the exit-port. The inner door of that small airlock was closed. The tell-tale said the outer was not locked. Someone had gone out, quietly. The girl. Of course. Calhoun said angrily;

"How long ago, Murgatroyd?"

"Chee!" said Murgatroyd indignantly.

It wasn't an answer, but it showed that Murgatroyd was vexed that he'd been left behind. He and the girl were close friends, now. If she'd left Murgatroyd in the ship when he wanted to go with her, she wasn't coming back.

Calhoun swore. Then he made certain. She was not in the ship. He flipped the outside-speaker switch and said curtly into the microphone;

"Coffee! Murgatroyd and I are having coffee. Will you come back, please?"

He repeated the call, and repeated it again. Multiplied as his voice was by the speakers, she should hear him within a mile. She did not appear. He went to a small and inconspicuous closet

and armed himself. A Med Ship man was not ever expected to fight, but there were blast-rifles available for extreme emergency.

When he'd slung a power-pack over his shoulder and reached the airlock, there was still no sign of his late stowaway. He stood in the airlock door for long minutes, staring angrily about. Almost certainly she wouldn't be looking in the mountains for men of Dara come here for cattle. He used a pair of binoculars, first at low-magnification to search as wide an area down-valley as possible, and then at highest power to search the most likely routes.

He found a small, bobbing speck beyond a far-away hill-crest. It was her head. It went down below the hilltop.

He snapped a command to Murgatroyd, and when the *tor-mal* was on the ground outside, he locked the port with that combination that nobody but a Med Ship man was at all likely to discover or use.

"She's an idiot!" he told Murgatroyd sourly. "Come along! We've got to be idiots too!"

He set out in pursuit.

The girl had a long start. Twice Calhoun came to places where she could have chosen either of two ways onward. Each time he had to determine which she'd followed. That cost time. Then the mountains ended, abruptly, and a vast undulating

plain stretched away to the horizon. There were at least two large masses and many smaller clumps of what could only be animals gathered together. Cattle.

But here the girl was plainly in view. Calhoun increased his stride. He began to gain on her. She did not look behind.

Murgatroyd said "Chee!" in a complaining tone.

"I should have left you behind," agreed Calhoun dourly, "but there was and is a chance I won't get back. You'll have to keep on hiking."

He plodded on. His memory of the terrain around the mining settlement told him that there was no definite destination in the girl's mind. But she was in no such despair as to want deliberately to be lost. She'd guessed, Calhoun believed, that if there were Darrians on the planet, they'd keep the landing-grid under observation. If they saw her leave that area and could see that she was alone, they should intercept her to find out the meaning of the Med Ship's landing. Then she could identify herself as one of them and give them the terribly necessary warning of Weald's suspicions.

"But," said Calhoun sourly, "if she's right, they'll have seen me marching after her now, which spoils her scheme. And I'd like to help it, but the way she's going is too dangerous!"

HE went down into one of the hollows of the uneven plain. He saw a clump of a dozen or so cattle a little distance away. The bull looked up and snorted. The cows regarded him truculently. Their air was not one of bovine tranquility.

He was up the farther hillside and out of sight before the bull worked himself up to a charge. Then Calhoun suddenly remembered one of the items in the data about cattle he'd looked into just the other day. He felt himself grow pale.

"Murgatroyd!" he said sharply. "We've got to catch up! Fast! Stay with me if you can, but . . ." He was jog-trotting as he spoke— "even if you get lost I have to hurry!"

He ran fifty paces and walked fifty paces. He ran fifty and walked fifty. He saw her, atop a rolling of the ground. She came to a full stop. He ran. He saw her turn to retrace her steps. He flung to the safety of the blast-rifle and let off a roaring blast at the ground for her to hear.

Suddenly she was fleeing desperately, toward him. He plunged on. She vanished down into a hollow. Horns appeared over the hillcrest she'd just left. Cattle appeared. Four—a dozen—fifteen—twenty. They moved ominously in her wake. He saw her again, running frantically over another upward swell of the prairie. He

let off another blast to guide her. He ran on at top speed with Murgatroyd trailing anxiously behind. From time to time Murgatroyd called "*Chee-chee-chee!*" in frightened pleading not to be abandoned.

More cattle appeared against the horizon. Fifty or a hundred. They came after the first clump. The first-seen group of a bull and his harem were moving faster, now. The girl fled from them, but it is the instinct of beef-cattle on the open range—Calhoun had learned it only two days before—to charge any human they find on foot. A mounted man to their dim minds is a creature to be tolerated or fled from, but a human on foot is to be crushed and stamped and gored.

Those in the lead were definitely charging now, with heads bent low. The bull charged furiously with shut eyes, as bulls do, but the many-times-more-deadly cows charged with their eyes wide open and wickedly elert, and with a lumbering speed much greater than the girl could manage.

She came up over the last rise, chalky-white and gasping, her hair flying, in the last extremity of terror. The nearest of the pursuing cattle were within ten yards when Calhoun fired from twenty yards beyond. One creature bellowed as the blast-bolt struck. It went down and others

crashed into it and swept over it, and more came on. The girl saw Calhoun, now, and ran toward him, panting, and he knelt very deliberately and began to check the charge by shooting the leading animals.

He did not succeed. There were more cattle following the first, and more and more behind them. It appeared that all the cattle on the plain joined in the blind and senseless charge. The thudding of hooves became a mutter and then a rumble and then a growl. Plunging, clumsy figures rushed past on either side. But horns and heads heaved up over the mound of animals Calhoun had shot. He shot them too. More and more cattle came pounding past the rampart of his victims, but always, it seemed, some elected to climb the heap of their dead and dying fellows, and Calhoun shot and shot.

But he split the herd. The foremost animals had been charging a sighted human enemy. Others had followed because it is the instinct of cattle to join their running fellows in whatever crazed urgency they feel. There was a dense, pounding, horrible mass of running bulls and cows and calves; bellowing, wailing, grunting, puffing, raising thick and impenetrable clouds of dust which had everything but galloping beasts going past on either side.

It lasted for minutes. Then the

thunder of hooves diminished. It ended abruptly, and Calhoun and the girl were left alone with the gruesome pile of animals which had divided the charging herd into two parts. They could see the rears of innumerable running animals, stupidly continuing the charge—hardly different, now, from a stampede—whose original objective none now remembered.

CALHOUN thoughtfully touched the barrel of his blast-rifle and winced at its scorching heat.

"I just realized," he said coldly, "that I don't know your name. What is it?"

"M-maril," said the girl. She swallowed. "Th-thank you—."

"Maril," said Calhoun, "you are an idiot! It was half-witted at best to go off by yourself! You could have been lost! You could have cost me days of hunting for you, days badly needed for more important matters!" He stopped and took breath. "You may have spoiled what little chance I've got to do something about the plans Weald's already making!"

He said more bitterly still;

"And I had to leave Murgatroyd behind to get to you in time! He was right in the path of that charge!"

He turned away from her and said dourly;

"All right! Come on back to the ship. We'll go to Dara. We'd

have to, anyhow. But Murgatroyd—"

Then he heard a very small sneeze. Out of a rolling wall of still-rolling dust, Murgatroyd appeared forlornly. He was dust-covered, and draggled, and his tail drooped, and he sneezed again. He moved as if he could barely put one paw before another, but at the sight of Calhoun he sneezed yet again and said, "*Chee!*" in a disconsolate voice. Then he sat down and waited for Calhoun to pick him up.

When Calhoun did so, Murgatroyd clung to him pathetically and said, "*Chee-chee!*" and again "*Chee-chee!*" with the intonation of one telling of incredible horrors and disasters endured.

Calhoun headed back for the valley, the settlement and the Med Ship. Murgatroyd clung to his neck. The girl Maril followed visibly shaken.

Calhoun did not speak to her again. He led the way. A mile back toward the mountains, they began to see stragglers from the now-vanished herd. A little further, those stragglers began to notice them. And it would have been a matter of no moment if they'd been domesticated dairy-cattle, but these were range-cattle gone wild. Twice, Calhoun had to use his blast-rifle to discourage incipient charges by irritated bulls or even more irritated cows.



Those with calves darkly suspected Calhoun of designs upon their offspring.

It was a relief to enter the valley again. But it was two miles more to the landing-grid with the Med Ship beside it and the reek of carrion in the air.

They were perhaps two hundred feet from the ship when a blast-rifle crashed and its bolt whined past Calhoun so close that he felt the monstrous heat. There had been no challenge. There was no warning. There was simply a shot which came horribly close to ending Calhoun's career in a completely arbitrary fashion.

#### CHAPTER 4

FIVE minutes later Calhoun had located one would-be killer behind a mass of splintered planking that once had been a wall. He set the wood afire by a blaster-bolt and then viciously sent other bolts all around the man it had sheltered when he fled from the flames. He could have killed him ten times over, but it was more desirable to open communication. So he missed, intentionally.

Maril had cried out that she came from Dara and had word for them, but they did not answer. There were three men with heavy-duty blast-rifles. One was the one Calhoun had burned out of his hiding-place. That man's

rifle exploded when the flames hit it. Two remained. One—so Calhoun presently discovered—was working his way behind underbrush to a shelf from which he could shoot down at Calhoun. Calhoun had dropped into a hollow and pulled Maril to cover at the first shot. The second man happily planned to get to a point where he could shoot him like a fish in a barrel. The third man had fired half a dozen times and then disappeared. Calhoun estimated that he intended to get around to the rear, in hope there was no protection from that direction for Calhoun. It would take some time for him to manage it.

So Calhoun industriously concentrated his fire on the man trying to get above him. He was behind a boulder, not too dissimilar to Calhoun's breastwork. Calhoun set fire to the brush at the point at which the other man aimed. That, then, made his effort useless. Then Calhoun sent a dozen bolts at the other man's rocky shield. It heated up. Steam rose in a whitish mass and blew directly away from Calhoun. He saw that antagonist flee. He saw him so clearly that he was positive that there was a patch of blue pigment on the right-hand side of the back of his neck.

He grunted and swung to find the third. That man moved through thick undergrowth, and

Calhoun set it on fire in a neat pattern of spreading flames. Evidently, these men had had no training in battle-tactics with blast-rifles. The third man also had to get away. He did. But something from him arched through the smoke. It fell to the ground directly upwind from Calhoun. White smoke puffed up violently.

It was instinct that made Calhoun react as he did. He jerked the girl Maril to her feet and rushed her toward the Med Ship. Smoke from the flung bomb upwind barely swirled around him and missed Maril altogether. Calhoun, though, got a whiff of something strange, not scorched or burning vegetation at all. He ceased to breathe and plunged onward. In clear air he emptied his lungs and refilled them. They were then halfway to the ship, with Murgatroyd prancing on ahead.

But then Calhoun's heart began to pound furiously. His muscles twitched and tense. He felt extraordinary symptoms like an extreme of agitation. Calhoun was familiar enough with tear-gas, used by police on some planets. But this was different and worse. Even as he helped and urged Maril onward, he automatically considered his sensations, and had it. Panic gas! Police did not use it because panic is worse than rioting. Calhoun

felt all the physical symptoms of fear and of gibbering terror. A man whose mind yields to terror experiences certain physical sensations, wildly beating heart, tensed and twitching muscles, and a frantic impulse to convulsive action. A man in whom those physical sensations are induced by other means will—ordinarily—find his mind yielding to terror.

Calhoun couldn't combat his feelings, but his clinical attitude enabled him to act despite them. The three from Weald reached the base of the Med Ship. One of their enemies had lost his rifle and need not be counted. Another had fled from flames and might be ignored for some moments, anyhow. But a blast-bolt struck the ship's metal hull only feet from Calhoun, and he whipped around to the other side and let loose a staccato of fire which emptied the rifle of all its charges.

Then he opened the airlock door, hating the fact that he shook and trembled. He urged the girl and Murgatroyd in. He slammed the outer airlock door just as another blaster-bolt hit.

"They—they don't realize," said Maril desperately. "If they only knew—"

"Talk to them, if you like," said Calhoun. His teeth chattered and he raged, because the symp-

tom was of terror he denied.

He pushed a button on the control-board. He pointed to a microphone. He got at an oxygen-bottle and inhaled deeply. Oxygen, obviously, should be an antidote for panic, since the symptoms of terror act to increase the oxygenation of the blood-stream and muscles, and to make superhuman exertion possible if necessary. Breathing ninety-five per cent oxygen produced the effect the terror-inspiring gas strove for, so his heart slowed nearly to normal and his body relaxed. He held out his hand and it did not tremble.

**H**E turned to Maril. She hadn't spoken into the mike yet.

"They—may not be from Dara!" she said shakily. "I just thought! They could be somebody else—maybe criminals who planned to raid the mine for a shipload of its ore . . ."

"Nonsense!" said Calhoun. "I saw one of them clearly enough to be sure. But they're skeptical characters. I'm afraid there may be more on the way here wherever they keep themselves. Anyhow, now we know some of them are in hearing! I'll take advantage of that and we'll go on."

He took the microphone. Instantly later his voice boomed in the stillness outside the ship, cutting through the thin shrill of invisible small creatures.

"This is the Med Ship Aesclepius Twenty," said Calhoun's voice, amplified to a shout. "I left Weald four days ago, one day after the cargo-ship from here arrived with everybody on board dead. On Weald they don't know how it happened, but they suspect blueskins. Sooner or later they'll search here. Get away! Cover up your tracks! Hide all signs that you've ever been here! Get the hell away, fast! One more warning! There's talk of fusion-bombing Dara. They're scared! If they find your traces, they'll be more scared still! So cover up your tracks and—get—away—from—here!"

The many-times-multiplied voice rolled and echoed among the hills. But it was very clear. Where it could be heard it could be understood, and it could be heard for miles.

But there was no response to it. Calhoun waited a reasonable time. Then he shrugged and seated himself at the control-board.

"It isn't easy," he observed, "to persuade desperate men that they've out-smarted themselves! Hold hard, Murgatroyd!"

The rockets bellowed. Then there was a tremendous noise to end all noises, and the ship began to climb. It sped up and up and up. By the time it was out of atmosphere it had velocity enough to coast to clear space



and Calhoun cut the rockets altogether. He busied himself with those astrogational chores which began with orienting oneself to galactic directions after leaving a planet which rotates at its own individual speed. Then one computes the overdrive course to another planet, from the respective coordinates of the world one is leaving and the one one aims for. Then,—in this case at any rate—there was the very finicky task of picking out a fourth-magnitude star of whose planets one was his destination. He aimed for it with ultra-fine precision.

"Overdrive coming," he said presently. "Hold on!"

Space reeled. There was nausea and giddiness and a horrible sensation of falling in a wildly unlikely spiral. Then stillness, and solidity, and the blackness of the Pit outside the Med Ship. The little craft was in overdrive again.

After a long while, the girl Maril said uneasily.

"I don't know what you plan now—."

"I'm going to Dara," said Calhoun. "On Orede I tried to get the blueskins there to get going, fast. Maybe I succeeded. I don't know. But this thing's been mishandled! Even if there's a famine, people shouldn't do things out of desperation!"

"I know now that I was—very foolish—."

"Forget it," commanded Calhoun. "I wasn't talking about you. Here I run into a situation that the Med Service should have caught and cleaned up generations ago! But it's not only a Med Service obligation, it's a current mess! Before I could begin to get at the basic problem, those idiots on Orede—. It'd happened before I reached Weald! An emotional explosion triggered by a ship full of dead men that nobody intended to kill."

Maril shook her head.

THOSE Darian characters," said Calhoun annoyedly, "shouldn't have gone to Orede in the first place. If they went there, they should at least have stayed on a continent where there were no people from Weald digging a mine and hunting cattle for sport on their off days! They could be spotted! I believe they were! And again, if it had been a long way from the mine installation, they could probably have wiped out the people who sighted them before they could get back with the news! But it looks like miners saw men hunting, and got close enough to see they were blueskins, and then got back to the mine with the news!"

She waited for him to explain.

"I know I'm guessing, but it fits!" he said distastefully. "So something had to be done. Either the mining settlement had to be

wiped out or the story that blueskins were on Orede had to be discredited. The blueskins tried for both. They used panic-gas on a herd of cattle and it made them crazy and they charged the settlement like the four-footed lunatics they are! And the blueskins used panic-gas on the settlement itself as the cattle went through. It should have settled the whole business nicely. After it was over every man in the settlement would believe he'd been out of his head for a while, and he'd have the crazy state of the settlement to think about, and he wouldn't be sure of what he'd seen or heard beforehand. They might try to verify the blueskin story later, but they wouldn't believe anything certainly! It should have worked!"

Again she waited. So Calhoun said very wryly indeed;

"Unfortunately, when the miners panicked, they stampeded into the ship. Also unfortunately, panic-gas got into the ship with them. So they stayed panicked while the astrogator—in panic!—took off and headed for Weald and threw on the overdrive—which would be set for Weald anyhow—because that would be the fastest way to run away from whatever he imagined he feared. But he and all the men on the ship were still crazy with panic from the gas they were re-breathing until they died!"

Silence. After a long interval, Maril asked;

"You don't think the—Darians intended to kill?"

"I think they were stupid!" said Calhoun angrily. "Somebody's always urging the police to use panic-gas in case of public tumult. But it's too dangerous. Nobody knows what one man will do in a panic. Take a hundred or two or three and panic them all, and there's no limit to their craziness! The whole thing was handled wrong!"

"But you don't blame them?"

"For being stupid, yes," said Calhoun fretfully. "But if I'd been in their place, perhaps . . ."

"Where were you born?" asked Maril suddenly.

Calhoun jerked his head around. He said;

"No! Not where you're guessing—or hoping. Not on Dara. Just because I act as if Darians were human doesn't mean I have to be one! I'm a Med Service man, and I'm acting as I think I should." His tone became exasperated. "Dammit, I'm supposed to deal with health situations, actual and possible causes of human deaths! And if Weald thinks it finds proof that blueskins are in space again and caused the death of Wealdians it won't be healthy! They're half-way set anyhow to drop fusion-bombs on Dara to wipe it out!"

Maril said fiercely;



"They might as well drop bombs. It'll be quicker than starvation, at least!"

Calhoun looked at her more exasperatedly than before.

"It is a crop failure again?" he demanded. When she nodded he said bitterly; "Famine conditions already?" When she nodded again he said drearily; "And of course famine is the great-grandfather of health problems! And that's right in my lap with all the rest!"

He stood up. Then he sat down again.

"I'm tired!" he said flatly. "I'd like to get some sleep."

Maril understood. She picked up a book and went into the other cabin.

**A**LONE in the control compartment, he tried to relax, but it was not possible. He flung himself into a comfortable chair and considered the situation of the people of the planet Dara. Those people were marked by patches of blue pigment as an inherited consequence of a plague of three generations past. Dara was a planet of pariahs, excluded from the human race by those who had been conditioned to fear them.

And now there was famine on Dara for the second time, and they were of no mind to starve quietly. There was food on the planet Orede, monstrous herds of cattle without owners. It was nat-

ural enough for Darians to build a ship or ships and try to bring food back to its starving people. But that desperately necessary enterprise had now roused Weald to a frenzy of apprehension. Weald was if possible more hysterically afraid of blueskins than ever before, and even more implacably the enemy of the starving planet's population. Weald itself thrived and prospered. Ironically, it had such an excess of foodstuffs that it stored them in unneeded space-ships in orbits about itself. Hundreds of thousands of tons of grain circled Weald in sealed-tight hulks, while the people of Dara starved and only dared try to steal—it could be called stealing—some of the innumerable wild cattle of Orede.

The blueskins on Orede could not trust Calhoun, so they pretended not to hear—or maybe they didn't hear. They'd been abandoned and betrayed by all of humanity beyond their world. They'd been threatened and oppressed by guardships in orbit about them, ready to shoot down any space-craft they might send aloft.

So Calhoun pondered . . .

A long time later Calhoun heard small sounds which were not normal on a Med Ship in overdrive. They were not part of the random noises carefully gen-

erated to keep the silence of the ship endurable. Calhoun raised his head. He listened sharply. No sound could come from outside.

He knocked on the door of the sleeping-cabin. The noises stopped instantly.

"Come out," he commanded through the door.

"I'm—I'm all right," said Maril's voice. But it was not quite steady. She paused. I was just having a bad dream."

"I wish," said Calhoun, "that you'd tell me the truth occasionally! Come out, please!"

There were stirrings. After a little the door opened and Maril appeared. She looked as if she'd been crying. She said quickly;

"I probably look queer, but it's because I was asleep."

"To the contrary," said Calhoun, fuming, "you've been lying awake crying. I don't know why. I've been out here wishing I could sleep, because I'm frustrated. But since you aren't asleep maybe you can help me with my job. I've figured some things out. For some others I need facts. How about it?"

She swallowed.

"I'll try."

"Coffee?" he asked.

Murgatroyd popped his head out of his miniature sleeping-cabin.

"Chee?" he asked interestedly.

"Go back to sleep!" snapped Calhoun.

He began to pace back and forth.

"I need to know something about the pigment patches," he said jerkily. "Maybe it sounds crazy to think of such things now. First things first, you know. But that is a first thing! So long as Darrians don't look like the people of other worlds, they'll be considered different. If they look repulsive, they'll be thought of as evil. . . . Tell me about those patches. They're different-sized and different-shaped and they appear in different places. You've none on your face or hands, anyhow."

"I haven't any at all," said the girl reservedly.

"I thought—"

"Not everybody," she said defensively. "Nearly, yes. But not all. Some people don't have them. Some people are born with bluish splotches on their skin, but they fade out while they're children. Then they grow up they're just like—the people of Weald or any other world. And their children never have them."

Calhoun stared.

"You couldn't possibly be proved to be a Darian, then?"

She shook her head. Calhoun remembered, and started the coffee-maker.

"When you left Dara," he said, "You were carried a long, long way, to some planet where they'd practically never heard of

Dara, and where the name meant nothing. You could have settled there, or anywhere else and forgotten about Dara. But you didn't. Why not, since you're not a blueskin?"

"But I am!" she said fiercely. "My parents, my brothers and sisters, and Korvan—."

Then she bit her lip. Calhoun took note but did not comment on the name that she had mentioned.

"Then your parents had the splotches fade, so you never had them," he said absorbedly. "Something like that happened on Tralee, once! There's a virus—a whole group of virus particles! Normally we humans are immune to them. One has to be in terrifically bad physical condition for them to take hold and produce whatever effects they do. But once they're established they're passed on from mother to child. . . . And when they die out it's during childhood, too!"

He poured coffee for the two of them. As usual, Murgatroyd swung down to the floor and said impatiently;

"Chee! Chee! Chee!"

Calhoun absently filled Murgatroyd's tiny cup and handed it to him.

"But this is marvellous!" he said exuberantly. "The blue patches appeared after the plague, didn't they? After people recovered—when they recovered?"

MARIL stared at him. His mind was filled with strictly professional considerations. He was not talking to her as a person. She was purely a source of information.

"So I'm told," said Maril reservedly. "Are there any more humiliating questions you want to ask?"

He gaped at her. Then he said ruefully;

"I'm stupid, Maril, but you're touchy. There's nothing personal."

"There is to me!" she said fiercely. "I was born among blueskins, and they're of my blood, and they're hated and I'd have been killed on Weald if I'd been known as—what I am! And there's Korvan, who arranged for me to be sent away as a spy and advised me to do just what you said,—abandon my home world and everybody I care about! Including him! It's personal to me!"

Calhoun wrinkled his forehead helplessly.

"I'm sorry," he repeated. "Drink your coffee!"

"I don't want it," she said bitterly. "I'd like to die!"

"If you stay around where I am," Calhoun told her, "you may get your wish. All right. There'll be no more questions, I promise."

She turned and moved toward the door to the sleeping-cabin. Calhoun looked after her.

"Maril," he called out to her.  
"What?"

"Why were you crying?"

"You wouldn't understand," she said evenly.

Calhoun shrugged his shoulders almost up to his ears. He was a professional man. In his profession he was not incompetent. But there is no profession in which a really competent man tries to understand women. Calhoun annoyedly had to let fate or chance or disaster take care of Maril's personal problems. He had larger matters to cope with.

But he had something to work on, now. He hunted busily in the reference tapes. He came up with an explicit collection of information on exactly the subject he needed. He left the control-room to go down into the storage areas of the Med Ship's hull. He found an ultra-frigid storage box, whose contents were kept at the temperature of liquid air. He donned thick gloves, used a special set of tongs, and extracted a tiny block of plastic in which a sealed-tight phial of glass was embedded. It frosted instantly he took it out, and when the storage-box was closed again the block was covered with a thick and opaque coating of frozen moisture.

He went back to the control-room and pulled down the panel which made available a small-scale but surprisingly adequate

biological laboratory. He set the plastic block in a container which would raise it very, very gradually to a specific temperature and hold it there. It was, obviously, a living culture from which any imaginable quantity of the same culture could be bred. Calhoun set the apparatus with great exactitude.

"This," he told Murgatroyd, "may be a good day's work. Now I think I can rest."

Then, for a long while, there was no sound or movement in the Med Ship. The girl Maril may have slept, or maybe not. Calhoun lay relaxed in a chair which at the touch of a button became the most comfortable of sleeping-places. Murgatroyd remained in his cubbyhole, his tail curled over his nose. There were comforting, unheard, easily dismissable murmurings now and again. They kept the feeling of life alive in the ship. But for such infinitesimal stirrings of sound—carefully recorded for this exact purpose—the feel of the ship would have been that of a tomb.

But it was quite otherwise when another ship-day began with the taped sounds of morning activities as faint as echoes but nevertheless establishing an atmosphere of their own.

CALHOUN examined the plastic block and its contents. He read the instruments which had

cared for it while he slept. He put the block—no longer frosted—in the culture-microscope and saw its enclosed, infinitesimal particles of life in the process of multiplying on the food that had been frozen with them when they were reduced to the spore condition. He beamed. He replaced the block in the incubation oven and faced the day cheerfully.

Maril greeted him with great reserve. They breakfasted.

"I've been thinking," said Maril evenly. "I think I can get you a hearing for—whatever ideas you may have to help Dara."

"Kind of you," murmured Calhoun. "May I ask whose influence you'll exert?"

"There's a man," said Maril reservedly, "who—thinks a great deal of me. I don't know his present official position, but he was certain to become prominent. I'll tell him how you've acted up to now, and your attitude, and of course that you're Med Service. He'll be glad to help you, I'm sure."

"Splendid!" said Calhoun, nodding. "That will be Korvan." She started.

"How did you know?"

"Intuition," said Calhoun dryly. "All right. I'll count on him."

But he did not. He worked in the tiny biological lab all that ship-day and all the next. The girl remained quiet.

On the ship-day after, the time for breakfast approached. And while the ship was practically a world all by itself, it was easy to look forward with confidence to the future. But when contact and—in a fashion—conflict with other and larger worlds loomed nearer, prospects seemed less bright. Calhoun had definite plans, now, but there were so many ways in which they could be frustrated! Weald's political leaders could not oppose hysterical demands for action against blueskins, after a deathship arrived with no signs whatever of blueskins as responsible for its cargo of corpses. It was certain that a starving Dara would tend to desperate and fatal measures against hereditary enemies.

Calhoun sat down at the control-board and watched the clock.

"I've got things lined up," he told Maril wryly, "if only they work out. *If* I can make somebody on Dara listen and follow my advice and *if* Weald doesn't get ideas and isn't doing what I suspect it is, maybe something can be done."

"I'm sure you'll do your best," said Maril politely.

Calhoun managed to grin. He watched the ship-clock. There was no sensation attached to overdrive travel except at the beginning and the end. It was now time for the end. He might find that absolutely anything had

happened while he made plans which would immediately be seen to be hopeless. Weald could have sent ships to Dara, or Dara might be in such a state of desperation that . . .

As it turned out, Dara was desperate. The Med Ship came out nearly a light-month from the sun about which the planet Dara revolved. Calhoun went into a short hop toward it. Then Dara was on the other side of the blazing yellow star. It took time to reach it. He called down, identifying himself and the ship, and asking for coördinates so his ship could be brought to ground. There was confusion, as if the request were so unusual that the answers were not ready. The grid, too, was on the planet's night side. Presently the ship was locked onto by the grid's force-fields. It went downward without incident.

Calhoun saw that Maril sat tensely, twisting her fingers within each other, until the ship actually touched ground.

Then he opened the exit-port, and faced armed men in the darkness, with blast-rifles trained on him. There was a portable cannon trained on the Med Ship itself.

"Come out!" rasped a voice. "If you try anything you get blasted! Your ship and its contents are siezed by the planetary government!"

IT seemed that the smell of hunger was in the air. The armed men were cadaverous. Lights came on, and stark, harsh shadows lay black upon the ground. Calhoun's captors were uniformed, but the uniforms hung loosely upon them. Where the lights struck upon their faces, their cheeks were hollow. They were emaciated. And there were the splotches of pigment of which Calhoun had heard. The leader of the truculent group was blue, except for two fingers which in the glaring illumination seemed whiter than white.

"Out!" said that man savagely. "We're taking over your stock of food. You'll get your share of it, like everybody else, but—out!"

Maril spoke over Calhoun's shoulder. She uttered a cryptic sentence or two. It should have amounted to identification, but there was skepticism in the the armed party.

"Oh, you're one of us, eh?" said the guard-leader sardonically. "You'll have a chance to prove that! Come out of there!"

Calhoun spoke abruptly;

"This is a Med Ship," he said. "There are medicines and bacterial cultures, inside it. They shouldn't be meddled with. Here on Dara you've had enough of plagues!"

The man with the blue hand said as sardonically as before;

"I said the government was taking over your ship! It won't be looted. But you're not taking a full cargo of food away! In fact, it's not likely you're leaving!"

"I want to speak to someone in authority," snapped Calhoun. "We've just come from Weald." He felt bristling hatred all about him as he named Weald. "There's tumult there. They're talking about dropping fusion bombs here. It's important that I talk to somebody with the authority to take a few sensible precautions!"

He descended to the ground. There was a panicky "*Chee! Chee!*" from behind him, and Murgatroyd came dashing to swarm up his body and cling apprehensively to his neck.

"What's that?"

"A *tormal*," said Calhoun. "He's not a pet. Your medical men will know something about him. This is a Med Ship and I'm a Med Ship man, and he's an important member of the crew. He's a Med Ship *tormal* and he stays with me!"

The man with the blue hand said harshly;

"There's somebody waiting to ask you questions. Here!"

A ground-car came rolling out from the side of the landing-grid enclosure. The ground-car ran on wheels, and wheels were not

much used on modern worlds. Dara was behind the times in more ways than one.

"This car will take you to Defense and you can tell them anything you want. But don't try to sneak back in this ship! It'll be guarded!"

The ground-car was enclosed, with room for a driver and the three from the Med Ship. But armed men festooned themselves about its exterior and it went bumping and rolling to the massive ground-layer girders of the grid. It rolled out under them and there was paved highway. It picked up speed.

There were buildings on either side of the road, but few showed lights. This was night-time, and the men at the landing-grid had set a pattern of hunger, so that the silence and the dark buildings did not seem a sign of tranquility and sleep, but of exhaustion and despair. The highway lamps were few, by comparison with other inhabited worlds, and the ground-car needed lights of its own to guide its driver over a paved surface that needed repair. By those moving lights other depressing things could be seen. Untidiness. Buildings not kept up to perfection. Evidences of apathy. The road hadn't been cleaned lately. There was litter here and there.

Even the fact that there were no stars added to the feeling of



wretchedness and gloom and—ultimately—of hunger.

Maril spoke nervously to the driver.

"The famine isn't any better?"

He moved his head in negation, but did not speak.

"I left—two years ago," said Maril. "It was just beginning then. Rationing hadn't started then—."

The driver said evenly;

"There's rationing now!"

THE car went on and on. A vast open space appeared ahead. Lights about its perimeter seemed few and pale.

"E-everything seems—worse. Even the lights."

"Using all the power," said the driver, "to warm up ground to grow crops where it ought to be winter. Not doing too well, either."

Calhoun knew, somehow, that Maril moistened her lips.

"I—was sent," she explained to the driver, "to go ashore on Trent and then make my way to Weald. I—mailed reports of what I found out back to Trent. Somebody got them back to here whenever—it was possible."

The driver said;

"Everybody knows the man on Trent disappeared. Maybe he got caught, maybe somebody saw him without makeup. Or maybe he just quit being one of us. What's the difference? No use!"

Calhoun found himself wincing a little. The driver was not angry. He was hopeless. But men should not despair. They shouldn't accept hostility from those about them as a device of fate for their destruction. They shouldn't . . .

Maril said quickly to him.

"You understand? Dara's a heavy-metals planet. There aren't many light elements in our soil. Potassium is scarce. So our ground isn't very fertile. Before the Plague we traded heavy metals and manufactures for imports of food and potash. But since the Plague we've had no off-planet commerce. We've been—quarantined."

"I gathered as much," said Calhoun. "It was up to Med Service to see that that didn't happen. It's up to Med Service now to see that it stops."

"Too late now for anything," said the driver, "whatever Med Service may be! They're talking about cutting down our population so there'll be food enough for some to live. There are two questions about it: who's to be kept alive and why."

The ground-car aimed now for a cluster of faintly brighter lights on the far side of the great open space. They enlarged as they grew nearer. Maril said hesitantly;

"There was someone—Korvan —" Calhoun didn't catch the rest of the name, Maril said hesitant-

ly; "He was working on food-plants. I—thought he might accomplish something . . ."

The driver said caustically;

"Sure! Everybody's heard about him! He came up with a wonderful thing! He and his outfit worked out a way to process weeds so they can be eaten. And they can. You can fill your belly and not feel hungry, but it's like eating hay. You starve just the same. He's still working. Head of a government division."

The ground-car passed through a gate. It stopped before a lighted door. The armed men hanging to its outside dropped off. They watched Calhoun closely as he stepped out with Murgatroyd riding on his shoulder.

Minutes later they faced a hastily-summoned group of officials of the Darian government. For a ship to land on Dara was so remarkable an event that it called practically for a cabinet meeting. And Calhoun noted that they were no better fed than the guards at the space-port.

They regarded Calhoun and Maril with oddly burning eyes. It was, of course, because the two of them showed no signs of hunger. They obviously had not been on short rations.

"My name is Calhoun," said Calhoun briskly. "I've the usual Med Service credentials. Now . . ."

He did not wait to be ques-

tioned. He told them of the appalling state of things in the Twelfth Sector of the Med Service, so that men had been borrowed from other sectors to remedy the intolerable, and he was one of them. He told of his arrival at Weald and what had happened there, from the excessively cautious insistence that he prove he was not a Darian, to the arrival of the death-ship from Orede. He was giving them the news affecting them, as they had not heard it before.

He went on to tell of his stop at Orede and his purpose, and his encounter with the men he found there. When he finished there was silence. He broke it.

"Now," he said, "Maril's an agent of yours. She can add to what I've told you. Im Med Service. I have a job to do here to repair what wasn't done before. I should make a planetary health inspection and make recommendations for the improvement of the state of things. I'll be glad if you'll arrange for me to talk to your health officials. Things look bad, and something should be done."

Someone laughed without mirth.

"What will you recommend for long-continued undernourishment?" he asked derisively. "That's our health problem!"

"I recommend food," said Calhoun.

"Where'll you fill the prescription?"

"I've the answer to that, too," said Calhoun curtly. "I'll want to talk to any space-pilots you've got. Get your astrogators together and I think they'll approve my idea."

The silence was totally skeptical.

"Orede . . ."

"Not Orede," said Calhoun. "Weald will be hunting that planet over for Darians. If they find any, they'll drop bombs here."

"Our only space-pilots," said a tall man, presently, "are on Orede now. If you've told the truth, they'll probably head back because of your warning. They should bring meat."

His mouth worked peculiarly, and Calhoun knew that it was at the thought of food.

"Which," said another man sharply, "goes to the hospitals! I haven't tasted meat in two years!"

"Nobody has," growled another man still. "But here's this man Calhoun. I'm not convinced he can work magic, but we can find out if he lies. Put a guard on his ship. Otherwise let our health men give him his head. They'll find out if he's from this Medical Service he tells of! And this Maril—"

"I—can be identified," said Maril. "I was sent to gather information and sent it in secret

writing to one of us on Trent. I have a family here. They'll know me! And I—there was someone who was working on foods, and I believe he—made it possible to use—all sorts of vegetation for food. He will identify me."

Someone laughed harshly.

"Oh, yes!" said a man with a blue forehead. "He's a valuable man! Within the year he's come up with a way to make his weeds taste like any food one chooses. If we decide to cut our population, we'll simply give the people to be eliminated all they want to eat of his products. They'll not be hungry. They'll be quite happy. But they'll die for lack of nourishment. He's volunteered to prove it painless by going through it himself!"

Maril swallowed.

"I'd like to see him," she repeated. "And my family."

Some of the blue-splotched men turned away. A broad-shouldered man said bluntly;

"Don't look for them to be glad to see you. And you'd better not show yourself in public. You've been well fed. You'll be hated for that."

Maril began to cry. Murgatroyd said bewilderedly;

"Chee! Chee!"

Calhoun held him close. There was confusion. And Calhoun found the Minister of Health at hand—he looked most harried of

all the officials gathered to question Calhoun—and proposed that he get a look at the hospital situation right away.

IT wasn't practical. With all the population on half rations or less, when night came people needed to sleep. Most people, indeed, slept as many hours out of the traditional twenty-four as they could manage. It was much more pleasant to sleep than to be awake and constantly nagged at by continued hunger. And there was the matter of simple decency. Continuous gnawing hunger had an embittering effect upon everyone. Quarrelsomeness was a common experience. And people who would normally be the leaders of opinion felt shame because they were obsessed by thoughts of food. It was best when people slept.

Still, Calhoun was in the hospitals by daybreak. What he found moved him to savage anger. There were too many sick children. In every case undernourishment contributed to their sickness. And there was not enough food to make them well. Doctors and nurses denied themselves food to spare it for their patients.

Calhoun brought out hormones and enzymes and medicaments from the Med Ship while the guard in the ship looked on. He demonstrated the processes of

synthesis and autocatalysis that enabled such small samples to be multiplied indefinitely. He was annoyed by a clamorous appetite. There were some doctors who ignored the irony of medical techniques being taught to cure non-nutritional disease, when everybody was half-fed, or less. They approved of Calhoun. They even approved of Murgatroyd when Calhoun explained his function.

He was, of course, a Med Service *tormal*, and *tormals* were creatures of talent. They'd originally been found on a planet in the Deneb area, and they were engaging and friendly small animals, but the remarkable fact about them was that they couldn't contract any disease. Not any. They had a built-in, explosive reaction to bacterial and viral toxins, and there hadn't yet been any pathogenic organism discovered to which a *tormal* could not more or less immediately develop antibody-resistance. So that in interstellar medicine *tormals* were priceless. Let Murgatroyd be infected with however localized, however specialized an inimical organism, and presently some highly valuable defensive substance could be isolated from his blood and he'd remain in his usual exuberant good health. When the antibody was analyzed by those techniques of microanalysis the Service had devel-

oped,—why—that was that. The antibody could be synthesized and one could attack any epidemic with confidence.

The tragedy for Dara was, of course, that no Med Ship had come there, three generations ago, when the Dara plague raged. Worse, after the plague Weald was able to exert pressure which only a criminally incompetent Med Service director would have permitted. But criminal incompetence and its consequences was what Calhoun had been loaned to Sector Twelve to help remedy.

He was not at ease, though. No ship arrived from Orede to bear out his account of an attempt to get that lonely world evacuated before Weald discovered it had blueskins on it. Maril had vanished, to visit or return to her family; or perhaps to consult with the mysterious Korvan who'd arranged for her to leave Dara to be a spy, and had advised her simply to make a new life somewhere else, abandoning a famine-ridden, despised, and outcaste world. Calhoun had learned of two achievements the same Korvan had made for his world. Neither was remarkably constructive. He'd offered to prove the value of the second by dying of it. Which might make him a very admirable character, or he could have a passion for martyrdom,—which is much more common than most people

think. In two days Calhoun was irritable enough from unaccustomed hunger to suspect the worst of him.

And there was Weald to worry about. Weald was hysterically resolved to end what it considered the blueskin menace for once and for all. There were parallels to such unreasoning frenzy even in the ancient history of Earth. A word still remained in the dictionaries referring to it. Genocide.

MEANWHILE Calhoun worked doggedly; in the hospitals while the patients were awake and in the Med Ship—under guard—afterward. He had hunger cramps now, but he tested a plastic cube with a thriving biological culture in it. He worked at increasing his store of it. He'd snipped samples of pigmented skin from dead patients in the hospitals, and examined the pigmented areas, and very, very painstakingly verified a theory. It took an electron microscope to do it, but he found a virus in the blue patches which matched the type discovered on Tralee. The Tralee viruses had effects which were passed on from mother to child, and heredity had been charged with the observed results of quasi-living viral particles. And then Calhoun very, very carefully introduced into a virus culture the

material he had been growing in a plastic cube. He watched what happened.

He was satisfied, so much so that immediately afterward he barely managed to stagger off to bed.

That night the ship from Orede came in, packed with frozen bloody carcasses of cattle. Calhoun knew nothing of it. But next morning Maril came back. There were shadows under her eyes and her expression was of someone who has lost everything that had meaning in her life.

"I'm all right," she insisted, when Calhoun commented. "I've been visiting my family. I've seen—Korvan. I'm quite all right."

"You haven't eaten any better than I have," Calhoun observed.

"I—couldn't!" admitted Maril. "My sisters—my little sisters—so thin. . . . There's rationing for everybody and it's all efficiently arranged. They even had rations for me. But I couldn't eat! I—gave most of my food to my sisters and they—squabbled over it!"

Calhoun said nothing. There was nothing to say. Then she said in a no less desolate tone;

"Korvan said I was foolish to come back."

"He could be right," said Calhoun.

"But I had to!" protested Maril. "Because I—I've been eat-

ing all I wanted to, on Weald and in the ship, and I'm ashamed because they're half-starved and I'm not. And when you see what hunger does to them. . . . It's terrible to be half-starved and not able to think of anything but food!"

"I hope," said Calhoun, "to do something about that. If I can get hold of an astrogorator or two."

"The—ship that was on Orede came in during the night," Maril told him shakily. "It was loaded with frozen meat, but one ship-load's not enough to make a difference on a whole planet! And if Weald hunts for us on Orede, we daren't go back for more meat."

She said abruptly;

"There are some prisoners. They were miners. They were crowded out of the ship. The Darians who'd stampeded the cattle took them prisoners. They had to!"

"True," said Calhoun. "It wouldn't have been wise to leave Wealdians around on Orede with their throats cut. Or living, either, to tell about a rumor of blue-skins. Even if their throats will be cut now. Is that the program?"

Maril shivered.

"No. . . . They'll be put on short rations like everybody else. And people will watch them. The Wealdians expect to die of plague any minute because they've been

with Darrians. So people look at them and laugh. But it's not funny."

"It's natural," said Calhoun, "but perhaps lacking in charity. Look here! How about those astrogators? I need them for a job I have in mind."

Maril wrung her hands.

"C—come here," she said in a low tone.

THERE was an armed guard in the control-room of the ship. He'd watched Calhoun a good part of the previous day as Calhoun performed his mysterious work. He'd been off-duty and now was on duty again. He was bored. So long as Calhoun did not touch the control-board, though, he was uninterested. He didn't even turn his head when Maril led the way into the other cabin and slid the door shut.

"The astrogators are coming," she said swiftly. "They'll bring some boxes with them. They'll ask you to instruct them so they can handle our ship better. They lost themselves coming back from Orede, no, they didn't lose themselves, but they lost time—enough time almost to make an extra trip for meat. They need to be experts. I'm to come along, so they can be sure that what you teach them is what you've been doing right along."

Calhoun said;

"Well?"

"They're crazy!" said Maril vehemently. "They knew Weald would do something monstrous sooner or later. But they're going to try to stop it by more monstrousness sooner! Not everybody agrees, but there are enough. So they want to use your ship—it's faster in overdrive and so on. And they'll go to Weald—in this ship—and—they say they'll give Weald something to keep it busy without bothering us!"

Calhoun said drily;

"This pays me off for being too sympathetic with blueskins! But if I'd been hungry for a couple of years, and was despired to boot by the people who kept me hungry, I suppose I might react the same way. No," he said curtly as she opened her lips to speak again. "Don't tell me the trick. Considering everything, there's only one trick it could be. But I doubt profoundly that it would work. All right."

He slid the door back and returned to the control-room. Maril followed him. He said detachedly;

"I've been working on a problem outside of the food one. It isn't the time to talk about it right now, but I think I've solved it."

Maril turned her head, listening. There were footsteps on the tarmac outside the ship. Both doors of the airlock were open. Four men came in. They were



young men who did not look quite as hungry as most Darrians, but there was a reason for that. Their leader introduced himself and the others. They were the astro-gators of the ship Dara had built to try to bring food from Orede. They were not good enough, said their self-appointed leader. They overshot their destination. They came out of overdrive too far off line. They needed instructions.

Calhoun nodded, and observed that he'd been asking for them.

"We've got orders," said their leader, steadily, "to come on board and learn from you how to handle this ship. It's better than the one we've got."

"I asked for you," repeated Calhoun. "I've an idea I'll explain as we go along. Those boxes?"

Someone was passing in iron boxes through the airlock. One of the four very carefully brought them inside.

"They're rations," said a second young man. "We don't go anywhere without rations—except Orede."

"Orede, yes. I think we were shooting at each other there," said Calhoun pleasantly. "Weren't we?"

"Yes," said the young man.

He was neither cordial nor antagonistic. He was impassive. Calhoun shrugged.

"Then we can take off immediately. Here's the communica-

tor and there's the button. You might call the grid and arrange for us to be lifted."

The young man seated himself at the control-board. Very professionally, he went through the routine of preparing to lift by landing-grid, which routine has not changed in two hundred years. He went briskly ahead until the order to lift. Then Calhoun stopped him.

"Hold it!"

He pointed to the airlock. Both doors were open. The young man at the control-board flushed vividly. One of the others closed and dogged the doors.

THE ship lifted. Calhoun watched with seeming negligence. But he found occasion for a dozen corrections of procedure. This was presumably a training voyage of his own suggestion. Therefore when the blueskin pilot would have flung the Med Ship into undirected overdrive, Calhoun grew stern. He insisted on a destination. He suggested Weald. The young men glanced at each other and accepted the suggestion. He made the acting pilot look up the intrinsic business of its sun and measure its apparent brightness from just off Dara. He made him estimate the change in brightness to be expected after so many hours in overdrive, if one broke out to measure.

The first blueskin student pilot ended a Calhoun-determined tour of duty with rather more of respect for Calhoun than he'd had at the beginning. The second was anxious to show up better than the first. Calhoun drilled him in the use of brightness-charts, by which the changes in apparent brightness of stars between overdrive hops could be correlated with angular changes to give a three-dimensional picture of the nearer heavens. It was a highly necessary art which had not been worked out on Dara, and the prospective astrogators became absorbed in this and other fine points of space-piloting. They'd done enough, in a few trips to Orede, to realize that they needed to know more. Calhoun showed them.

Calhoun did not try to make things easy for them. He was hungry and easily annoyed. It was sound training tactics to be severe, and to phrase all suggestions as commands. He put the four young men in command of the ship in turn, under his direction. He continued to use Weald as a destination, but he set up problems in which the Med Ship came out of overdrive pointing in an unknown direction and with a precessory motion. He made the third of his students identify Weald in the celestial globe containing hundreds of millions of stars, and get on course in

overdrive toward it. The fourth was suddenly required to compute the distance to Weald from such data as he could get from observation, without reference to any records.

By this time the first man was chafing to take a second turn. Calhoun gave each of them a second gruelling lesson. He gave them, in fact, a highly condensed but very sound course in the art of travel in space. His young students took command in four-hour watches, with at least one breakout from overdrive in each watch. He built up enthusiasm in them. They ignored the discomfort of being hungry, though there had been no reason for them to stint on food in Orede—in growing pride in what they came to know.

When Weald was a first-magnitude star, the four were not highly qualified astrogators, to be sure, but they were vastly better spacemen than at the beginning. Inevitably, their attitude toward Calhoun was respectful. He'd been irritable and right. To the young, the combination is impressive.

Maril had served as passenger only. In theory she was to compare Calhoun's lessons with his practise when alone. But he did nothing on this journey which—teaching considered—was different from the two interstellar journeys Maril had made with

him. She occupied the sleeping-cabin during two of the six watches of each ship-day. She operated the food-reader, which was almost completely emptied of its original store of food;—confiscated by the government of Dara. That amount of food would make no difference to the planet, but it was wise for everyone on Dara to be equally ill-fed.

On the sixth day out from Dara, the sun of Weald had a magnitude of minus five-tenths.\* The electron telescope could detect its larger planets, especially a gas-giant fifth-orbit world of high albedo. Calhoun had his four students estimate its distance again, pointing out the difference that could be made in breakout position if the Med Ship were mis-aimed by as much as one second of arc.

"That does it," Calhoun announced cheerfully. "That's the last order I'll give you. You're graduate pilots from here on! Relax and have some coffee."

"AND now," said Calhoun, "I suppose you'll tell me the truth about those boxes you brought on board. You said they were rations, but they haven't been opened in six days. I have an idea what they mean, but you tell me."

\*Earth's sun, from Earth, is of magnitude roughly minus thirty-six.

The four looked uncomfortable. There was a long pause.

"They could be," said Calhoun detachedly, "cultures to be dumped on Weald. Weald is making plans to wipe out Dara. So some fool has decided to get Weald too busy fighting a plague of its own to bother with you. Is that right?"

The young men stirred uneasily. "Well—I—I, sir," said one of them, unhappily, "that's what we were ordered to do."

"I object," said Calhoun. "It wouldn't work. I just left Weald a little while back, remember. They've been telling themselves that some day Dara would try that. They've made preparations to fight any imaginable contagion you could drop on them. Every so often somebody claims it's happening. It wouldn't work."

"But—"

"In fact," said Calhoun, "I will not permit you to do anything of the kind."

One of the young men, staring at Calhoun, nodded suddenly. His eyes closed. He jerked his head erect and looked bewildered. A second sank heavily into a chair. He said remotely, "Thish sfunny!" and abruptly went to sleep. The third found his knees giving away. He paid elaborate attention to them, stiffening them. But they yielded like rubber and he went slowly down to the floor. The fourth said thickly

with difficulty, yet reproachfully;

"'Thought y'were our frien'!"

He collapsed.

Calhoun very soberly tied them hand and foot and laid them out comfortably on the floor. Maril watched, white-faced, her hand to her throat. "What have you done to them? Are they dead?"

"No," said Calhoun, just drugged. "They'll wake up presently."

Maril said in a tense and desperate whisper;

"You're—betraying us! You're going to take us to Weald."

"No," said Calhoun. "We'll only orbit around it. First, though, I want to get rid of those damned packed-up cultures. They're dead, by the way. I killed them with supersonics a couple of days ago, while a fine argument was going on about distance-measurements by variable Cepheids of known period."

He put the four boxes carefully in the waste-disposal unit. He operated it. The boxes and their contents streamed out to space in the form of metallic and other vapors. Calhoun sat at the control-desk.

"I'm a Med Service man," he said detachedly. "I couldn't co-operate in the spread of plague, anyhow, though a useful epidemic might be another matter. But the important thing right now is not keeping Weald busy with troubles

to increase their hatred of Dara. It's getting some food for Dara. And driblets won't help. What's needed is in thousands of tons,—or tens of thousands." Then he said;" Overdrive coming, Murgatroyd! Hold fast!"

The universe vanished. The customary unpleasant sensations accompanied the change. Murgatroyd burped.

## CHAPTER 6

A large part of the firmament was blotted out by the blindingly bright half-disk of Weald, as it shone in the sunshine. It had ice-caps at its poles, and there were seas, and the mottled look of land which had that carefully maintained balance of woodland and cultivated areas which was so effective in climate control. The Med Ship floated free, and Calhoun fretfully monitored all the beacon frequencies known to man.

There was relative silence inside the ship. Maril watched Calhoun in a sort of despairing indecision. The four young blueskins still slept, still bound hand and foot upon the control-room floor. Murgatroyd regarded them, and Maril, and Calhoun in turn, and his small and furry forehead wrinkled helplessly.

"They can't have landed what I'm looking for!" protested Calhoun as his search had no result.

"They can't. It would be too sensible for them to have done it!"

Murgatroyd said "*Chee!*" in a subdued voice.

"But where the devil did they put them?" demanded Calhoun. "A polar orbit would be ridiculous! They— "Then he grunted in disgust. "Oh! Of course! Now, where's the landing-grid?"

He worked busily for minutes, checking the position of the Wealdian landing-grid—mapped in the Sector Directory—against the look of continents and seas on the half-disk so plainly visible outside. He found what he wanted. He put on the ship's solar-system drive.

"I wish," he complained to Maril, "I wish I could think straight the first time! And it's so obvious! If you want to put something out in space, and not have it interfere with traffic, in what sort of orbit and at what distance will you put it?"

Maril did not answer.

"Obviously," said Calhoun, "you'll put it as far as possible from the landing-pattern of ships coming in to the space-port. You'll put it on the opposite side of the planet. And you'll want it to stay out of the way, where anybody can know it is at any time of the day or night without having to calculate anything. So you'll put it out in orbit so it will revolve around Weald in exactly one day, neither more or

less, and you'll put it above the equator. And then it will remain quite stationary above one spot on the planet, a hundred and eighty degrees longitude away from the landing-grid and directly over the equator."

He scribbled for a moment.

"Which means forty-two thousand miles high, give or take a few hundred, and—here! And I was hunting for it in a close-in orbit!"

He grumbled to himself. He waited while the solar-system drive pushed the Med Ship a quarter of the way around the bright planet below. The sunset line vanished and the planet's disk became a complete circle. Then Calhoun listened to the monitor earphones again, and grunted once more, and changed course, and presently made a noise indicating satisfaction.

Again presently he abandoned instrument-control and peered directly out of a port, handling the solar-system drive with great care. Murgatroyd said depressedly;

"*Chee!*"

"Stop worrying," commanded Calhoun. "We haven't been challenged, and there is a beacon transmitter at work, just to make sure that nobody bumps into what we're looking for. It's a great help, because we do want to bump,—gently."

Stars swung across the port

out of which he looked. Something dark appeared,—and then straight lines and exact curvings. Even Maril, despairing and bewildered as she was, caught sight of something vastly larger than the Med Ship, floating in space. She stared. The Med Ship maneuvered very cautiously. She saw another large object. A third. A fourth. There seemed to be dozens of them.

They were space-ships, huge by comparison with Aescipus Twenty. They floated as the Med Ship did. They did not drive. They were not in formation. They were not at even distances from each other. They did not point in the same direction. They swung in emptiness like derelects.

Calhoun jockeyed his small ship with infinite care. Presently there came the gentlest of impacts and then a clanking sound. The appearance out the vision-port became stationary, but still unbelievable. The Med Ship was grappled magnetically to a vast surface of welded metal.

Calhoun relaxed. He opened a wall-panel and brought out a vacuum suit. He began briskly to get it on.

"Things move smoothly," he commented. "We weren't challenged. So it's extremely unlikely that we were spotted. Our friends on the floor ought to begin to come to shortly. And I'm going to find out now whether I'm a

hero or in sure-enough trouble!"

Maril said drearily;

"I don't know what you've done, except—"

Calhoun blinked at her, in the act of hauling the vacuum suit over his shoulders.

"Isn't it self-evident?" he demanded. "I've been giving astro-gation lessons to these characters. I certainly didn't do it to help them dump germ-cultures. on Weald! I brought them here! Don't you see the point? These are space-ships. They're in orbit around Weald. They're not manned and they're not controlled. In fact, they're nothing but sky-riding storage bins!"

He seemed to consider the explanation complete. He wriggled his arms into the sleeves and gloves of the suit. He slung the air-tanks over his shoulder and hooked them to the suit.

"I'll be back," he said. "I hope with good news. I've reason to be hopeful, though, because these Wealdians are very practical men. They have things all prepared and tidy. I suspect I'll find these ships with stores of air and fuel—maybe even food—so that if Weald should manage to make a deal for the stuff stored out here in them, they'd only have to bring out crews."

**H**E lifted the space-helmet down from its rack and put it on. He tested it, reading the tank

air-pressure, power-storage, and other data from the lighted miniature instruments visible through pinholes above his eye-level. He fastened a space-rope about himself, speaking through the helmet's opened face-plate.

"If our friends should wake up before I get back," he added, "please restrain them. I'd hate to be marooned."

He went waddling into the air-lock with the coil of space-rope over one vacuum-suited arm. The inner lock door closed behind him. A little later Maril heard the outer lock open. Then soundlessness.

Murgatroyd whimpered a little. Maril shivered. Calhoun had gone out of the ship to nothingness. He'd said that what he was looking for—and what he'd found—was forty-two thousand miles from Weald. One could imagine falling forty-two thousand miles, where one couldn't imagine falling a light-year. Calhoun was walking on the steel plates of a gigantic space-ship which floated among dozens of its fellows, all seeming derelects and seemingly abandoned. He was able to walk on the nearest because of magnetic-soled shoes. He trusted his life to them and to a flimsy space-rope which trailed after him out the Med Ship's airlock.

Time passed. A clock ticked in that hurried tempo of five ticks to the second which has been the habit of clocks since time im-

memorial. Very small and trivial noises came from the background tape, preventing utter silence from hanging intolerably in the ship. They were traffic-sounds, recorded on a world no one knew, how many light-years distant, and nobody knew when. There were sounds as of voices, too faint to suggest words, but imparting a feel of life and activity to a soundless ship.

Maril found herself listening tensely for something else. One of the four bound blueskins snored, and stirred, and slept again. Murgatroyd gazed about unhappily, and swung down to the control-room floor, and then paused for lack of any place to go or thing to do. He sat down and began half-heartedly to lick his whiskers. Maril stirred.

Murgatroyd looked at her hopefully.

"Chee?" he asked shrilly.

She shook her head. It became a habit to act as if Murgatroyd were a human being.

"N-no," she said unsteadily. "Not yet."

More time passed. An unbearably long time. Then there was the faintest of clankings. It repeated. Then, abruptly, there were noises in the air-lock. They continued. They were fumbling noises.

The outer airlock door closed. The inner door opened. Dense white fog came out of it. There



was motion. Calhoun followed the fog out of the lock. He carried objects which had been weightless, but were suddenly heavy in the ship's gravity-field. There were two space-suits and a curious assortment of parcels. He spread them out, flipped aside the face-plate, and said briskly;

"This stuff is cold! Turn a heater on it, will you Maril?"

He began to work his way out of his vacuum-suit.

"Item," he said. "The ships are fuelled *and* provisioned. A practical tribe, the Wealdians! The ships are ready to take off as soon as they're warmed up inside. A half-degree sun doesn't radiate heat enough to keep a ship warm, when the rest of the cosmos is effectively near zero Kelvin. Here, point the heaters like this."

He adjusted the radiant-heat dispensers. The fog disappeared where their beams played. But the metal space-suits glistened and steamed,—and the steam disappeared within inches. They were so completely and utterly cold that they condensed the air about them as a liquid, which reëvaporated to make fog, which warmed up and disappeared and was immediately replaced.

"Item," said Calhoun again, getting his arms out of the vacuum-suit sleeves. "The controls are pretty nearly standard. Our sleeping friends will be able to astrogate them back to Dara

without trouble, provided only that nobody comes out here to bother us before they leave."

He shed the last of the space-suit, stepping out of its legs.

"And," he finished wryly, "I brought back an emergency supply of ship-provisions for everybody concerned, but find that I'm idiot enough to feel that they'll choke me if I eat them while Dara's still starving."

Maril said;

"But—there isn't any hope for Dara! No real hope!"

He gaped at her.

"What do you think we're here for?"

HE set to work to restore his four recent students to consciousness. It was not a difficult task. The dosage, mixed in the coffee he had given them earlier, was a light one. Calhoun took the precaution of disarming them first, but presently four hot-eyed young men glared at him.

"I'm calling," said Calhoun, holding a blaster negligently in his hand, "I'm calling for volunteers. There's a famine on Dara. There've been unmanageable crop-surpluses on Weald. On Dara, the government grimly rations every ounce of food. On Weald, the government has been buying up surplus grain to keep the price up. To save storage costs, it's loaded the grain into out-of-date space-ships it once

used to stand sentry over Dara to keep it out of space when there was another famine there. Those ships have been put out in orbit, where we're hooked on to one of them. It's loaded with half a million bushels of grain. I've brought space-suits from it, I've turned on the heaters in its interior, and I've set its overdrive unit for a hop to Dara. Now I'm calling for volunteers to take half a million bushels of grain to where it's needed. Do I get any volunteers?"

He got four. Not immediately, because they were ashamed that he'd made it impossible to carry out their original fanatic plan, and now offered something much better to make up for it. They raged. But half a million bushels of grain meant that people who must otherwise die might live.

Ultimately, truculently, first one and then another angrily agreed.

"Good!" said Calhoun. "Now, how many of you dare risk the trip alone? I've got one grain-ship warming up. There are plenty of others around us. Every one of you can take a ship and half a million bushels to Dara, if you have the nerve?"

The atmosphere changed. Suddenly they clamored for the task he offered them. They were still acutely uncomfortable. He'd bossed them and taught them until they felt capable and glamor-

ous and proud. Then he'd pinned their ears back. But if they returned to Dara with four enemy ships and unimaginable quantities of food with which to break the famine. . . .

There was work to be done first, of course. Only one ship was so far warming up. Three more had to be entered, in space-suits, and each had to have its interior warmed so breathable air could exist inside it, and at least part of the stored provisions had to be brought up to reasonable temperature for use on the journey. Then the overdrive unit had to be inspected and set for the length of journey that a direct overdrive hop to Dara would mean, and Calhoun had to make sure again that each of the four could identify Dara's sun under all circumstances and aim for it with the requisite high precision, both before going into overdrive and after breakout. When all that was accomplished, Calhoun might reasonably hope that they'd arrive. But it wasn't a certainty.

Still, presently his four students shook hands with him, with the fine tolerance of young men intending much greater achievements than their teacher. They wouldn't speak on communicator again, because their messages might be picked up on Weald.

Of course for this action to be successful, it had to be performed with the stealth of sneak-thieves.

WHAT seemed a long time passed. Then one ship turned slowly upon some unseen axis. It wavered back and forth, seeking a point of aim. A second twisted in its place. A third put on the barest trace of solar-system drive to get clear of the rest. The fourth . . .

One ship vanished. It had gone into overdrive, heading for Dara at many times the speed of light. Another. Two more.

That was all. The remainder of the fleet hung clumsily in emptiness. And Calhoun worriedly went over in his mind the lessons he'd given in such a pathetically small number of days. If the four ships reached Dara, their pilots would be heroes. Calhoun had presented them with that estate over their bitter objection. But they would glory in it, if they reached Dara.

Maril looked at him with very strange eyes.

"Now what?" she asked.

"We hang around," said Calhoun, "to see if anybody comes up from Weald to find out what's happened. It's always possible to pick up a sort of signal when a ship goes into overdrive. Usually it doesn't mean a thing. Nobody pays any attention. But if somebody comes out here—"

"What?"

"It'll be regrettable," said Calhoun. He was suddenly very tired. "It'll spoil any chance of our

coming back and stealing some more food—like interstellar mice. If they find out what we've done they'll expect us to try it again. They might get set to fight. Or they might simply land the rest of these ships."

"If I'd realized what you were about," said Maril, "I'd have joined in the lessons. I could have piloted a ship."

"You wouldn't have wanted to," said Calhoun. He yawned. "You wouldn't want to be a heroine."

"Why?"

"Korvan," said Calhoun. He yawned again. "I've asked about him. He's been trying very desperately to deserve well of his fellow blueskins. All he's accomplished is develop a way to starve painlessly. He wouldn't feel comfortable with a girl who'd helped make starving unnecessary. He'd admire you politely, but he'd never marry you. And you know it."

She shook her head, but it was not easy to tell whether she denied the reaction of Korvan—whom Calhoun had never met—or denied that he was more important to her than anything else. The last was what Calhoun plainly implied.

"You don't seem to be trying to be a hero!" she protested.

"I'd enjoy it," admitted Calhoun, "but I have a job to do. It's got to be done. It's much more im-

portant than being admired."

"You could take another ship back," she told him. "It would be worth more to Dara than the Med Ship is! And then everybody would realize that you'd planned everything."

"Ah!" said Calhoun. "But you've no idea how much this ship matters to Dara!"

He seated himself at the controls. He slipped headphones over his ears. He listened. Very, very carefully, he monitored all the wave-lengths and wave-forms he could discover in use on Weald. There was no mention of the oddity of behavior of shiploads of surplus grain aloft. There was no mention of the ships at all. But there was plenty of mention of Dara, and blueskins, and of the vicious political fight now going on to see which political party could promise the most complete protection against blueskins.

After a full hour of it, Calhoun flipped off his receptor and swung the Med Ship to an exact, painstakingly precise aim at the sun around which Dara rolled. He said;

"Overdrive coming, Murgatroyd!"

Murgatroyd grabbed. The stars went out and the universe reeled and the Med Ship became a sort of cosmos all its own.

Calhoun yawned again.

"Now there's nothing to be done for a day or two," he said

wearily, "and I'm beginning to understand why people sleep all they can, on Dara. It's one way not to feel hungry."

Maril said tensely;

"You're going back? After they took the ship from you?"

"The job's not finished," he explained. "Not even the famine's ended, and the famine's a second-order effect. If there were no such thing as a blueskin, there'd be no famine. Food could be traded for. We've got to do something to make sure there are no more famines."

She looked at him oddly.

"It would be desirable," she said with irony. "But you can't do it."

"Not today, no," he admitted. Then he said longingly, "I'm about to catch up on some sleep."

Maril rose and went into the other cabin. He settled down into the chair and fell instantly asleep.

FOR very many ship-hours, then, there was no action or activity or happening of any imaginable consequence in the Med Ship. Very, very far away, light-years distant and light years apart, four shiploads of grain hurtled toward the famine-stricken planet of blueskins. Each great ship had a single semi-skilled blueskin for pilot and crew. Thousands of millions of suns blazed with violence appropriate to their stellar types in a

galaxy of which a very small proportion had been explored and colonized by humanity. The human race was now to be counted in quadrillions on scores of hundreds of inhabited worlds, but the tiny Med Ship seemed the least significant of all possible created things. It could travel between star-systems and even star-clusters, but it was not yet capable of crossing the continent of suns on which the human race arose. And between any two solar systems the journeying of the Med Ship consumed much time. Which would be maddening for someone with no work to do or no resources in himself, or herself.

On the second ship-day Calhoun labored painstakingly and somewhat distastefully at the little biological laboratory. Maril watched him in a sort of brooding silence. Murgatroyd slept much of the time, with his furry tail wrapped meticulously across his nose.

Toward the end of the day Calhoun finished his task. He had a matter of six or seven cubic centimeters of clear liquid as the conclusion of a long process of culturing, and examination by microscope, and again culturing plus final filtration. He looked at a clock and calculated time.

"Better wait until tomorrow," he observed, and put the bit of clear liquid in a temperature-controlled place of safe-keeping.

"What is it?" asked Maril. "What's it for?"

"It's part of a job I have on hand," said Calhoun. He considered. "How about some music?"

She looked astonished. But he set up an instrument and fed microtape into it and settled back to listen. Then there was music such as she had never heard before. Again it was a device to counteract isolation and monotonous between-planet voyages. To keep it from losing its effectiveness, Calhoun rationed himself on music, as on other things. Calhoun deliberately went for weeks between uses of his recordings, so that music was an event to be looked forward to and cherished.

When he tapered off the stirring symphonies of Kun Gee with tranquilizing, soothing melodies from the Rim School of composers, Maril regarded him with a very peculiar gaze indeed.

"I think I understand now," she said slowly, "why you don't act like other people. Toward me, for example. The way you live gives you what other people have to try to get in crazy ways,—making their work feed their vanity, and justify pride, and make them feel significant. But you can put your whole mind on your work."

He thought it over.

"Med Ship routine is designed to keep one healthy in his mind," he admitted. "It works pretty



well. It satisfies all my mental appetites. But naturally there are instincts—”

She waited. He did not finish.

“What do you do about instincts that work and music and such things can’t satisfy?”

Calhoun grinned wryly;

“I’m stern with them. I have to be.”

He stood up and plainly expected her to go into the other cabin for the night. She did.

**I**T was after breakfast-time of the next ship-day when he got out the sample of clear liquid he’d worked so long to produce.

“We’ll see how it works,” he observed. “Murgatroyd’s handy in case of a slip-up. It’s perfect-

ly safe so long as he’s aboard and there are only the two of us.”

She watched as he injected half a cc under his own skin. Then she shivered a little.

“What will it do?”

“That remains to be seen.” He paused a moment. “You and I,” he said with some dryness, “make a perfect test for anything. If you catch something from me, it will be infective indeed!”

She gazed at him utterly without comprehension.

He took his own temperature. He brought out the folios which were his orders, covering each of the planets he should give a standard Medical Service inspection. Weald was there. Dara wasn’t. But a Med Service man

has much freedom of action, even when only keeping up the routine of normal Med Service. When catching up on badly neglected operations, he necessarily has much more. Calhoun went over the folios.

Two hours later he took his temperature again. He looked pleased. He made an entry in the ship's log. Two hours later yet he found himself drinking thirstily and looked more pleased still. He made another entry in the log and matter-of-factly drew a small quantity of blood from his own vein and called to Murgatroyd. Murgatroyd submitted aimably to the very trivial operation Calhoun carried out. Calhoun put away the equipment and saw Maril staring at him with a certain look of shock.

"It doesn't hurt him," Calhoun explained. "Right after he's born there's a tiny spot on his flank that has the pain-nerves desensitized. Murgatroyd's all right. That's what he's for!"

"But he's—your friend!"

"He's my assistant. I don't ask anything of him that I can do myself. But we're both Med Service. And I do things for him that he can't do for himself. For example, I make coffee for him."

Murgatroyd heard the familiar word. He said;

"Chee!"

"Very well," agreed Calhoun. "We'll all have some."

He made coffee. Murgatroyd sipped at the cup especially made for his little paws. Once he scratched at the place on his flank which had no pain-nerves. It itched. But he was perfectly content. Murgatroyd would always be contented when he was somewhere near Calhoun.

Another hour went by. Murgatroyd climbed up into Calhoun's lap and with a determined air went to sleep there. Calhoun disturbed him long enough to get an instrument out of his pocket. He listened to Murgatroyd's heartbeat with it while Murgatroyd dozed.

"Maril," he said. "Write down something for me. The time, and ninety-six, and one-twenty over ninety-four."

She obeyed, not comprehending. Half an hour later—still not stirring to disturb Murgatroyd—he had her write down another time and sequence of figures, only slightly different from the first. Half an hour later still, a third set. But then he put Murgatroyd down, well satisfied.

He took his own temperature. He nodded.

"Murgatroyd and I have one more chore to do," he told her. "Would you go in the other cabin for a moment?"

She went disturbedly into the other cabin. Calhoun drew a sample of blood from the insensitive area on Murgatroyd's flank.



Murgatroyd submitted with complete confidence in the man. In ten minutes Calhoun had diluted the sample, added an anticoagulant, shaken it up thoroughly, and filtered it to clarity with all red and white corpuscles removed. Another Med Ship man would have considered that Calhoun had had Murgatroyd prepare a splendid small sample of antibody-containing serum, in case something got out of hand. It would assuredly take care of two patients.

But a Med Ship man would also have known that it was simply one of those scrupulous precautions a Med Ship man takes when using cultures from store.

Calhoun put the sample away and called Maril back and offered no explanation. She said;

"I'll fix lunch." She hesitated. "You brought some food from the first Weald ship. Do you want it?"

He shook his head.

"I'm squeamish," he admitted. "The trouble on Dara is Med Service fault. Before my time, but still—I'll stick to rations until everybody eats."

HE watched her unobtrusively as the day went on. Presently he considered that she was slightly flushed. Shortly after the evening meal of singularly unappetizing Darian rations, she drank thirstily. He did not com-

ment. He brought out cards and showed her a complicated game of solitaire in which mental arithmetic and expert use of probability increased one's chance of winning.

By midnight, ship-time, she'd learned the game and played it absorbedly. Calhoun was able to scrutinize her without appearing to do so, and he was satisfied again. When he mentioned that the Med Ship should arrive off Dara in eight hours more, she put the cards away and went into the other cabin.

Calhoun wrote up the log. He added the notes that Maril had made for him, of Murgatroyd's pulse and blood-pressure after the injection of the same culture that produced fever and thirstiness in himself and later—without contact with him or the culture—in Maril. He put a professional comment at the end.

"The culture seems to have retained its normal characteristics during long storage in the spore state. It revived and reproduced rapidly. I injected .5 cc under my skin and in less than one hour my temperature was 30.8° C. An hour later it was 30.9° C. This was its peak. It immediately returned to normal. The only other observable symptom was slightly increased thirst. Blood-pressure and pulse remained normal. The other person in the Med Ship displayed the same symp-

toms, in prompt and complete repetition, without physical contact."

He went to sleep, with Murgatroyd curled up in his cubbyhole.

The Med Ship broke out of overdrive at 1300 hours, ship time. Calhoun made contact with the grid and was promptly lowered to the ground.

It was almost two hours later—1500 hours ship-time—when the people of Dara were informed by broadcast that Calhoun was publicly to be executed; immediately.

#### CHAPTER 7

FROM the viewpoint of Darians, the decision of Calhoun's guilt and the decision to execute him were reasonable enough. Maril protested fiercely, and her testimony agreed with Calhoun's in every respect, but from a blueskin viewpoint their own statements were damning.

Calhoun had taken four young astrogators to space. They were the only semi-skilled space-pilots Dara had. There were no fully qualified men. Calhoun had asked for them, and taken them out to emptiness, and there he had instructed them in modern guidance-methods for ships of space. So far there was no disagreement. He'd proposed to make them more competent pilots; more capable of driving a ship

to Orede, for example, to raid the enormous cattle-herds there. And he'd had them drive the Med Ship to Weald, against which there could be no objection.

But just before arrival he had tricked all four of them by giving them drugged coffee. He'd destroyed the lethal bacterial cultures they'd been ordered to dump on Weald. Then he'd sent the four student pilots off separately—so he and Maril claimed—in huge ships crammed with grain. But those ships were not to be believed in, anyhow. Nobody on Dara could imagine stores of food bought up and stored away because it was useless; to keep up prices. Nobody believed in shiploads of grain to be had for the taking. They did know that the only four partially experienced space-pilots on Dara had been taken away and by Calhoun's own story sent out of the ship after they'd been drugged. Had they been trained, and had they been helped or even permitted to sow the seeds of plague on Weald, and had they come back prepared to pass on training to other men to handle other spaceships now feverishly being built in hidden places on Dara,—why—then Dara might have a chance of survival. But a space-battle with only partly trained pilots would be hazardous at best. With no trained pilots at all, it would be hopeless. So Calhoun, by his

own story, appeared to have doomed every living being on Dara to massacre from the bombs of Weald.

It was this last angle which destroyed any chance of anybody believing in such fairy-tale objects as ships loaded down with grain. Calhoun had shattered Dara's feeble hope of resistance. Weald had some ships and could build or buy others faster than Dara could hope to construct them. Equally important, Weald had a plenitude of experienced spacemen to man some ships fully and train the crews of others. If it had become desperately busy fighting plague, then a fleet to exterminate life on Dara would be delayed. Dara might have gained time at least to build ships which could ram their enemies and destroy them that way.

But Calhoun had made it impossible. If he told the truth and Weald already had a fleet of huge ships which only needed to be emptied of grain and filled with guns and men—why—Dara was doomed. But if he did not tell the truth it was equally doomed by his actions. So Calhoun would be killed.

His execution was to take place in the open space of the landing-grid, with vision-cameras transmitting the sight over all the blueskin planet. Half-starved men with grisly blue blotches on their skins, marched him to the

center of the largest level space on the planet which was not desperately being cultivated. Their hatred showed in their expressions. Bitterness and fury surrounded Calhoun like a wall. Most of Dara would have liked to see him killed in a manner as atrocious as his crime, but no conceivable death would be satisfying.

So the affair was coldly businesslike, with not even insults offered to him. He was left to stand alone in the very center of the landing-grid floor. There were a hundred blasters which would fire upon him at the same instant. He would not only be killed; he would be destroyed. He would be vaporized by the blue-white flames poured upon him.

**H**IS death was remarkably close. Nothing remained but the order to fire, when loudspeakers from the landing-grid office froze everything. One of the grain-ships from Weald had broken out of overdrive and its pilot was triumphantly calling for landing-coördinates. The grid office relayed his call to loudspeaker circuits as the quickest way to get it on the communication system of the whole planet.

*"Calling ground," boomed the triumphant voice of the first of the student pilots Calhoun had trained. "Calling ground! Pilot Franz in captured ship requests*

*coöordinates for landing! Purpose of landing, to deliver half a million bushels of grain captured from the enemy!"*

At first, nobody dared believe it. But the pilot could be seen on vision. He was known. No blue-skin would be left alive long enough to be used as a decoy by the men of Weald! Presently the giant ship on its second voyage to Dara—the first had been a generation ago, when it threatened death and destruction—appeared as a dark pinpoint in the sky. It came down and down, and presently it hovered over the center of the termac, where Calhoun composedly stood on the spot where he was to have been executed.

The landing-grid crew shifted the ship to one side, and only then did Calhoun stroll in a leisurely fashion toward the Med Ship by the grid's metal-lace wall.

The big ship touched ground, and its exit-port revolved and opened, and the student pilot stood there grinning and heaving out handsfull of grain. There was a swarming, yelling, deliriously triumphant crowd, then, where only minutes before there'd been a mob waiting to rejoice when Calhoun's living body exploded into flame.

They no longer hated Calhoun, but he had to fight his way to the Med Ship, nevertheless. He was surrounded by now-ecstati-

cally admiring citizens of Dara, only minutes since they'd thirsted for his blood.

Two hours after the first ship, a second landed. Dara went wild again. Four hours later still, the third arrived. The fourth came down on the following day.

Then Calhoun faced the executive and cabinet of Dara for the second time. His tone and manner were very dry.

"Now," he said curtly, "I would like a few more astrogators to train. I think it likely that we can raid the Wealdian grain-fleet one time more, and in so doing get the beginning of a fleet for defense. I insist, however, that it must not be used in combat! We might as well be sensible about this situation! After all, four shiploads of grain won't break the famine! They'll help a lot, but they're only the beginning of what's needed for a planetary population!"

"How much grain can we hope for?" demanded a man with a blue mark covering all his chin.

Calhoun told him.

"How long before Weald can have a fleet overhead, dropping fusion bombs?" demanded another, grimly.

Calhoun named a time. But then he said;

"I think we can keep them from dropping bombs if we can get the grain-fleet and some capable astrogators."

"What do you have in mind?"

He told them. It was not possible to tell the whole story of what he considered sensible behavior. An emotional program can be presented and accepted immediately. A plan of action which is actually intelligent, considering all elements of a situation, has to be accepted piecemeal. Even so, the military men growled.

"We've plenty of heavy elements," said one, with one eye and half his forehead colored blue. "If we'd used our brains, we'd have more bombs than Weald can hope for! We could turn that whole planet into a smoking cinder!"

"Which," said Calhoun acidly, "would give you some satisfaction but not an ounce of food! And food's more important than satisfaction. Now, I'm going to take off for Weald again. I'll want somebody to build an emergency device for my ship, and I'll want the four pilots I've trained and twenty more candidates. And I'd like to have some decent rations! When the last trip brought back two million bushels of grain, you can spare adequate food for twenty men for a few days!"

**I**T took some time to get the special device constructed, but the Med Ship lifted in two days more. The device for which it had waited was simply a preven-

tive of the disaster overtaking the ship from the mine on Orede. It was essentially a tank of liquid oxygen, packed in the space from which stores had been taken away. When the ship's air-supply was pumped past it, first moisture and then CO<sub>2</sub> froze out. Then the air flowed over the liquefied oxygen at a rate to replace the CO<sub>2</sub> with more useful breathing material. Then the moisture was restored to the air as it warmed again. For so long as the oxygen lasted, fresh air for any number of men could be kept purified and breathable. The Med Ship's normal equipment could take care of no more than ten. But with this it could journey to Weald with almost any complement on board.

Maril stayed on Dara when the Med. Ship left. Murgatroyd protested shrilly when he discovered her about to be closed out by the closing lock-door.

"Chee!" he said indignantly. "Chee! Chee!"

"No," said Calhoun, "we'll be crowded enough anyhow. We'll see her later."

He nodded to one of the first four student pilots, and he crisply made contact with the landing-grid office. He very efficiently supervised as the grid took the ship up. The other three of the four first-trained men explained every move to sub-classes assigned to each. Calhoun moved

about, listening and making certain that the instruction was up to standard.

He felt queer, acting as the supervisor of an educational institution in space. He did not like it. There were twenty-four men beside himself crowded into the Med Ship's small interior. They got in each other's way. They trampled on each other. There was always somebody eating, and always somebody sleeping, and there was no need whatever for the background tape to keep the ship from being intolerably quiet. But the air-system worked well enough, except once when the reheater unit quit and the air inside the ship went down below freezing before the trouble could be found and corrected.

The journey to Weald, this time, took seven days because of the training program in effect. Calhoun bit his nails over the delay. But it was necessary for each of the students to make his own line-ups on Weald's sun, and compute distances, and for each of them to practise maneuverings that would presently be called for. Calhoun hoped desperately that preparations for active warfare—or massacre—did not move fast on Weald. He believed, however, that in the absence of direct news from Dara, Wealdian officials would take the normal course of politicians. They had pro-

claimed the deathship from Orede an attack from Dara. Therefore they would specialize on defensive measures before plumping for offense. They'd get patrolships out to spot invasion ships long before they worked on a fleet to destroy the blueskins. It would meet the public demand for defense.

Calhoun was right. The Med Ship made its final approach to Weald under Calhoun's own control. He'd made brightness-measurements on his previous journey and he used them again. They would not be strictly accurate, because a sunspot could knock all meaning out of any reading beyond two decimal places. But the first breakout was just far enough from the Wealdian system for Calhoun to be able to pick out its planets with electron telescope at maximum magnification. He could aim for Weald itself,—allowing, of course, for the lag in the apparent motion of its image because of the limited speed of light. He tried the briefest of overdrive hops, and came out within the solar system and well inside any watching patrol.

That was pure fortune. It continued. He'd broken through the screen of guard-ships in undetectable overdrive. He was within half an hour's solar-system drive of the grain-fleet. There was no alarm, at first. Of course

radars spotted the Med Ship as an object, but nobody paid attention. It was not headed for Weald. It was probably assumed to be a guard-boat itself. Such mistakes do happen. It reached the grain-fleet.

Again from the storage-space from which supplies had been removed, Calhoun produced vacuum suits. The four first students went out, each escorting a less-accustomed neophyte and all fastened firmly together with space-ropes. They warmed the interiors of four ships and went on to others. Presently there were eight ships making ready for an interstellar journey, each with a scared but resolute new pilot familiarizing himself with its controls. There were sixteen ships. Twenty. Twenty-three.

A GUARD-SHIP came humming out from Weald. It would be armed, of course. It came droning, droning up the forty-odd thousand miles from the planet. Calhoun swore. He could not call his students and tell them what was happening. The guard-ship would overhear. He could not trust untried young men to act rationally if they were unwarned and the guard-ship arrived and matter-of-factly attempted to board one of them.

Then he was inspired. He called Murgatroyd, placed him before the communicator, and

set it at voice-only transmission. This was familiar enough, to Murgatroyd. He'd often seen Calhoun use a communicator.

"Chee!" shrilled Murgatroyd. "Chee-chee!"

A startled voice came out of the speaker.

"What's that?"

"Chee." said Murgatroyd zestfully.

The communicator was talking to him. Murgatroyd adored three things in order. One was Calhoun. The second was coffee. The third was pretending to converse like a human being. The speaker said explosively;

"You there, identify yourself!"

"Chee-chee-chee-chee!" observed Murgatroyd. He wriggled with pleasure and added, reasonably enough, "Chee!"

The communicator bawled;

"*Calling ground! Calling ground! Listen to this! Something that ain't human's talking at me on a communicator! Listen in an' tell me what to do!*"

Murgatroyd interposed with another shrill;

"Chee!"

Then Calhoun pulled the Med Ship slowly away from the clump of still-lifeless grain-ships. It was highly improbable that the guard-boat would carry an electron telescope. Most likely it would have only an echo-radar, and so could determ-



ine only that an object of some sort moved of its own accord in space. Calhoun let the Med Ship accelerate. That would be final evidence. The grain-ships were between Weald and its sun. Even electron telescopes on the ground—and electron-telescopes were ultimately optical telescopes with electronic amplification—even electron telescopes on the ground could not get a good image of the ship through sunlit atmosphere.

"Chee?" asked Murgatroyd solicitously. "Chee-chee-chee?"

"Is it blueskins?" shakily demanded the voice from the guard-boat. "Ground! Ground! Is it blueskins?"

A heavy, authoritative voice came in with much greater volume.

"That's no human voice," it said harshly. "Approach its ship and send back an image. Don't fire first unless it heads for ground."

The guard-ship swerved and headed for the Med Ship. It was still a very long way off.

"Chee-chee," said Murgatroyd encouragingly.

Calhoun changed the Med Ship's course. The guard-ship changed course too. Calhoun let it draw nearer,—but only a little. He led it away from the fleet of grain-ships.

He swung his electron telescope on them. He saw a space-suited figure outside one,—

safely roped, however. It was easy to guess that someone had meant to return to the Med Ship for orders or to make a report, and found the Med Ship gone. He'd go back inside and turn on a communicator.

"Chee!" said Murgatroyd.

The heavy voice boomed;

"You there! This is a human-occupied world! If you come in peace, cut your drive and let our guard-ship approach!"

Murgatroyd replied in an interested but doubtful tone. The booming voice bellowed. Another voice of higher authority took over. Murgatroyd was entranced that so many people wanted to talk to him. He made what for him was practically an oration. The last voice spoke persuasively and suavely.

"Chee-chee-chee-chee," said Murgatroyd.

One of the grain-ships flickered and ceased to be. It had gone into overdrive. Another. And another. Suddenly they began to flick out of sight by twos and threes.

"Chee," said Murgatroyd with a note of finality.

The last grain-ship vanished. "Calling guard-ship," said Calhoun drily. "This is Med ship Aesclepus Twenty. I called here a couple of weeks ago. You've been talking to my *tormal*, Murgatroyd."

A pause. A blank pause. Then

profanity of deep and savage intemperance.

"I've been on Dara," said Calhoun.

Dead silence fell.

"There's a famine there," said Calhoun deliberately. "So the grain-ships you've had in orbit have been taken away by men from Dara—blueskins if you like—to feed themselves and their families. They've been dying of hunger and they don't like it."

There was a single burst of the unprintable. Then the formerly suave voice said waspishly;

*"Well? The Med Service will hear of your interference!"*

"Yes," said Calhoun. "I'll report it myself. I have a message for you. Dara is ready to pay for every ounce of grain and for the ships it was stored in. They'll pay in heavy metals,—irridium, uranium,—that sort of thing."

The suave voice fairly curdled.

*"As if we'd allow anything that was ever on Dara to touch ground here!"*

"Ah! But there can be sterilization. To begin with metals, uranium melts at 1150° centigrade, and tungsten at 3370° and irridium at 2350°. You could load such things and melt them down in space and then tow them home. And you can actually sterilize a lot of other useful materials!"

The suave voice said infuriatedly;

*"I'll report this! You'll suffer for this!"*

Calhoun said pleasantly;

"I'm sure that what I say is being recorded, so that I'll add that it's perfectly practical for Wealdians to land on Dara, take whatever property they think wise,—to pay for damage done by blueskins, of course—and get back to Wealdian ships with absolutely no danger of carrying contagion. If you'll make sure the recording's clear."

HE described, clearly and specifically; exactly how a man could be outfitted to walk into any area of any conceivable contagion, do whatever seemed necessary in the way of looting—but Calhoun did not use the word—and then return to his fellows with no risk whatever of bringing back infection. He gave exact details. Then he said;

"My radar says you've four ships converging on me to blast me out of space. I sign off."

The Med Ship disappeared from normal space, and entered that improbably stressed area of extension which it formed about itself and in which physical constants were wildly strange. For one thing, the speed of light in overdrive—stressed space had not been measured yet. It was too high. For another, a ship could travel very many times 186000 miles per second in overdrive.

The Med Ship did just that. There was nobody but Calhoun and Murgatroyd on board. There was companionable silence, —there were only the small threshold-of-perception sounds which one did not often notice, but which it would have been intolerable to have stop.

Calhoun luxuriated in regained privacy. For seven days he'd had twenty-four other human beings crowded into the two cabins of the ship, with never so much as one yard of space between himself and someone else. One need not be snobbish to wish to be alone sometimes!

Murgatroyd licked his whiskers thoughtfully.

"I hope," said Calhoun, "that things work out right. But they may remember on Dara that I'm responsible for some ten million bushels of grain reaching them. Maybe—just possibly—they'll listen to me and act sensibly. After all, there's only one way to break a famine. Not with ten million bushels for a whole planet! And certainly not with bombs!"

Driving direct, without pausing for practisings, the Med Ship could arrive at Dara in little more than five days. Calhoun looked forward to relaxation. As a beginning he made ready to give himself an adequate meal for the first time since first landing on Dara. Then, presently, he

sat down wryly to a double meal of Darian famine-rations, which were far from appetizing. But there wasn't anything else on board.

HE had some pleasure later, though, envisioning what went elsewhere. On Weald, obviously, there would be purest panic. The vanishing of the grain fleet wouldn't be charged against twenty-four men. A Darian fleet would be suspected, and with the suspicion terror, and with terror a governmental crisis. Then there'd be a frantic seizure of any craft that could take to space, and the agitated improvisation of a space-fleet.

But besides that, biological-warfare technicians would examine Calhoun's instructions for equipment by which armed men could be landed on a plague-stricken planet and then safely taken off again. Military and governmental officials would come to the eminently sane conclusion that while Calhoun could not well take active measures against blueskins, as a sane and proper citizen of the galaxy he would be on the side of law and order and propriety and justice, —in short, of Weald. So they ordered sample anti-contagion suits made according to Calhoun's directions, and they had them tested. They worked admirably.

On Dara, while Calhoun journeyed back to it, grain was distributed lavishly, and everybody on the planet had their cereal ration almost doubled. It was still not a comfortable ration, but the relief was great. There was considerable gratitude felt for Calhoun, which as usual included a lively anticipation of further favors to come. Maril was interviewed repeatedly, as the person best able to discuss him, and she did his reputation no harm. That was not all that happened on Dara . . .

There was something else. Very curious thing, too. There was a curious spread of mild symptoms which nobody could exactly call a disease. It lasted only a few hours. A person felt slightly feverish, and ran a temperature which peaked at 30.9° centigrade, and drank more water than usual. Then his temperature went back to normal and he forgot all about it. There have always been such trivial epidemics. They are rarely recorded, because few people think to go to a doctor. That was the case here.

Calhoun looked ahead a little, too. Presently the fleet of grainships would arrive and unload and lift again for Orede, and this time they would make an infinity of slaughter among wild cattle-herds, and bring back incredible quantities of fresh-slaughtered frozen beef. Almost

everybody would get to taste meat again, which would be most gratifying.

Then, the industries of Dara would labor at government-required tasks. An astonishing amount of fissionable material would be fashioned into bombs—a concession, by Calhoun—and plastic factories make an astonishing number of plastic suits. And large shipments of heavy metals in ingots would be made to the planet's capital city and there would be some guns and minor items. . . .

Perhaps somebody could have found out any of these items in advance, but it was unlikely that anybody did. Nobody but Calhoun, however, would ever have put them together and hoped very urgently that that was the way things would work out. He could see a promising total result. In fact, in the Med ship hurtling through space, on the fourth day of his journey he thought of an improvement that could be made in the sum of all those happenings when they were put together.

HE landed on Dara. Maril came to the Med Ship. Murgatroyd greeted her with enthusiasm.

"Something unusual has happened," said Maril, very much subdued. "I told you that—sometimes blueskin markings fade

out on children, and then neither they nor their children ever have blue-skin markings again."

"Yes," said Calhoun. "I remember."

"And you were reminded of a group of viruses on Tralee. You said they only took hold of people in terribly bad physical condition, but then they could be passed on from mother to child. Until—sometimes—they died out."

Calhoun blinked.

"Yes. . . ."

"Korvan," said Maril very carefully. "Has worked out an idea that that's what happens to the blueskin markings on—us Darrians. He thinks that people almost dead of the plague could get the—virus, and if they recovered from the plague pass the virus on and—be blueskins."

"Interesting," said Calhoun, noncommittally.

"And when we went to Weald," said Maril very carefully indeed, "you were working with some culture-material. You wrote quite a lot about it in the ship's log. You gave yourself an injection. Remember? And Murgatroyd? You wrote down your temperature, and Murgatroyd's?" She moistened her lips. "You said that if infection passed between us, something would be very infectious indeed?"

"What are you driving at?"

Maril continued slowly. "Thousands of people are having their pigment-spots fade away. Not only children but grownups. And—Korvan has found out that it always seems to happen after a day when they felt feverish and very thirsty—and then felt all right again. You tried out something that made you feverish and thirsty. I had it too, in the ship. Korvan thinks there's been an epidemic of something that—is obliterating the blue spots on everybody that catches it. There are always trivial epidemics that nobody notices. Korvan's found evidence of one that's making 'blueskin' no longer a word with any meaning."

"Remarkable!" said Calhoun.

"Did you—do it?" asked Maril. "Did you start a harmless epidemic that—wipes out the virus that makes blueskins?"

Calhoun said in feigned astonishment,

"How can you think such a thing, Maril?"

"Because I was there," said Maril. She said somehow desperately; "I know you did it! But the question is—are you going to tell? When people find they're not blueskins any longer—when there's no such thing as a blueskin any longer—will you tell them why?"

"Naturally not," said Calhoun. "Why?" Then he guessed. "Has Korvan—."

"He thinks," said Maril," that he thought it up all by himself. He's found the proof. He's—very proud. I'd have to tell him the truth if you were going to tell. And he'd be ashamed and—angry."

Calhoun considered, staring at her.

"How it happened doesn't matter," he said at last. "The idea of anybody doing it deliberately would be disturbing, too. It shouldn't get about. So it seems much the best thing for Korvan to discover what's happened to the blueskin pigment, and how it happened, but not why."

She read his face carefully.

"You aren't doing it as a favor to me," she decided. "You'd rather it was that way."

She looked at him for a long time, until he squirmed. Then she nodded and went away.

An hour later the Wealdian space-fleet was reported, massed in space and driving for Dara.

## CHAPTER 8

THERE were small scout-ships which came on ahead of the main fleet. They'd originally been guard-boats, intended for solar-system duty only and quite incapable of overdrive. They'd come from Weald in the cargo-holds of the liners now transformed into fighting ships. The scouts swept low, transmitting

fine-screen images back to the fleet, of all that they might see before they were shot down. They found the landing-grid. It contained nothing larger than Calhoun's Med Ship, Aesclepius Twenty.

They searched here and there. They flitted to and fro, scanning wide bands of the surface of Dara. The planet's cities and highways and industrial centers were wholly open to inspection from the sky. It looked as if the scouts hunted most busily for the fleet of former grain-ships which Calhoun had said blueskins had seized and rushed away. If the scouts looked for them, they did not find them.

Dara offered no opposition to the scout-ships. Nothing rose to space to oppose or to resist their search. They went darting over every portion of the hungry planet, land and seas alike, and there was no sign of military preparedness against their coming. The huge ships of the main fleet waited while they reported monotonously that they saw no sign of the stolen fleet. But the stolen fleet was the only means by which the planet could be defended. There could be no point in a pitched battle in emptiness. But a fleet with a planet to back it might be dangerous.

Hours passed. The Wealdian main fleet waited. There was no offensive movement by the fleet.

There was no defensive action from the ground. With fusion-bombs certain to be involved in any actual conflict, there was something like an embarrassed pause. The Wealdian ships were ready to bomb. They were less anxious to be vaporized by possible suicide-dashes of defending ships who might blow themselves up near contact with their enemies.

But a fleet cannot travel some light-years through space to make a mere threat. And the Wealdian fleet was furnished with the material for total devastation. It could drop bombs from hundreds, or thousands, or even tens of thousands of miles away. It could cover the world of Dara with mushroom clouds springing up and spreading to make a continuous pall of atomic-fusion products. And they could settle down and kill every living thing not destroyed by the explosions themselves. Even the creatures of the deepest oceans would die of deadly, purposely-concentrated fallout particles.

The Wealdian fleet contemplated its own destructiveness. It found no capacity for defense on Dara. It moved forward.

But then a message went out from the capital city of Dara. It said that a ship in overdrive had carried word to a Darian fleet in space. The Darian fleet now hurtled toward Weald. It was a

fleet of thirty-seven giant ships. They carried such-and-such bombs in such-and-such quantities. Unless its orders were countermanded, it would deliver those bombs on Weald—set to explode. If Weald bombed Dara, the orders could not be withdrawn. So Weald could bomb Dara. It could destroy all life on the pariah planet. But Weald would die with it.

The fleet ceased its advance. The situation was a stalemate with pure desperation on one side and pure frustration on the other. This was no way to end the war. Neither planet could trust the other, even for minutes. If they did not destroy each other simultaneously, as now was possible, each would expect the other to launch an unwarned attack at some other moment. Ultimately one or the other must perish, and the survivor would be the one most skilled in treachery.

But then the pariah planet made a new proposal. It would send a messenger-ship to stop its own fleet's bombardment if Weald would accept payment for the grain-ships and their cargos. It would pay in ingots of iridium and uranium and tungsten—and gold if Weald wished it—for all damages Weald might claim. It would even pay indemnity for the miners of Orede, who had died by accident but



perhaps in some sense through its fault. It would pay . . . But if it were bombed, Weald must spout atomic fire and the fleet of Weald would have no home planet to return to.

THIS proposal seemed both craven and foolish. It would allow the fleet of Weald to loot and then betray Dara. But it was Calhoun's idea. It seemed plausible to the admirals of Weald. They felt only contempt for blueskins. Contemptuously, they accepted the semi-surrender.

The broadcast waves of Dara told of agreement, and wild and fierce resentment filled the pariah planet's people. There was almost—almost!—revolution to insist upon resistance, however hopeless and however fatal. But not all of Dara realized that a vital change had come about in the state of things on Dara. The enemy fleet had not a hint of it. And therefore—

In menacing array, the invading fleet spread itself about the skies of Dara, well beyond the atmosphere. Harsh voices talked with increasing arrogance to the landing-grid staff. A monster ship of Weald came heavily down, riding the landing-grid's force-fields. It touched gently. Its occupants were apprehensive, but hungry for the loot they had been assured was theirs. The ship's outer hull would be steril-

ized before it returned to Weald, of course. And there was adequate protection for the landing-party.

Men came out of the ship's ports. They wore the double, transparent sag-suits Calhoun had suggested, which had been painstakingly tested, and which were perfect protection against contagion. They could loot with impunity, and all contamination would remain outside the suits. What loot they gathered, obviously, could be decontaminated before it was returned to Weald. It was a most satisfactory discovery, to realize that blueskins could be not only scorned but robbed. There was only one bit of relevant information the space-fleet of Weald did not have.

That information was that the people of Dara weren't blueskins any longer. There'd been a tri-  
vial epidemic.

The sag-suited men of Weald went zestfully about their business. They took over the landing-grid's operation, driving the Darian operators away. For the first time in history the operators of a landing-grid wore make-up to look like they did have blue pigment in their skins. The Wealdian landing-party tested the grid's operation. They brought down another giant ship. Then another. And another.

Parties in the shiny sag-suits spread through the city. There

were the huge stock-piles of precious metals, brought in readiness to be surrendered and carried away. Some men set to work to load these into the holds—to be sterilized later. Some went forthrightly after personal loot.

They came upon very few Darrians. Those they saw kept sullenly away from them. They entered shops and took what they fancied. They zestfully removed the treasure of banks.

Triumphal and scornful reports went up to the hovering great ships. The blueskins, said the reports were spiritless and cowardly. They permitted themselves to be robbed. They kept out of the way. It had been observed that the population was streaming out of the city, fleeing because they feared the ships' landing-parties. The blueskins had abjectly produced all they'd promised of precious metals, but there was more to be taken.

More ships came down, and more. Some of the first, heavily loaded, were lifted to emptiness again and the process of decontamination of their hulls began. There was jealousy among the ships in space for those upon the ground. The first-landed ships had had their choice of loot. There were squabblings about priorities, now that the navy of Weald plainly had a license to steal. There was confusion among the members of the land-

ing-parties. Discipline disappeared. Men in plastic sag-suits roved about as individuals, seeking what they might loot.

THERE were armed and alerted landing-parties around the grid itself, of course, but the capital city of Dara lay open. Men coming back with loot found their ships already lifted off to make room for others. They were pushed into reëmbarking-parties of other ships. There were more and more men to be found on ships where they did not belong, and more and more not to be found where they did. By the time half the fleet had been aground, there was no longer any pretense of holding a ship down until all its crew returned. There were too many other ships' companies clamoring for their turn to loot. The rosters of many ships, indeed, bore no particular relationship to the men actually on board.

There were less than fifteen ships whose to-be-fumigated holds were still empty, when the watchful government of Dara broadcast a new message to the invaders. It requested that the looting stop. No matter what payment Weald claimed, it had taken payment five times over. Now was time to stop.

It was amusing. The space-admiral of Weald ordered his ships alerted for action. The mes-

sage-ship, ordering the Darian fleet away from Weald, had been sent off long since. No other ship could get away now! The Darrians could take their choice; accept the consequences of surrender, or the fleet would rise to throw down bombs.

Calhoun was asking politely to be taken to the Wealdian admiral when the trouble began. It wasn't on the ground, at all. Everything was under splendid control where a landing-force occupied the grid and all the ground immediately about it. The space admiral had headquarters in the landing-grid office. Reports came in, orders were issued, admirably crisp salutes were exchanged among sag-suited men . . . Everything was in perfect shape there.

But there was panic among the ships in space. Communicators gave off horrified, panic-stricken yells. There were screamings. Intelligible communications ceased. Ships plunged crazily this way and that. Some vanished in overdrive. At least one plunged at full power into a Darian ocean.

The space-admiral found himself in command of fifteen ships only, out of all his former force. The rest of the fleet went through a period of hysterical madness. In some ships it lasted for minutes only. In others it went on for half an hour or more. Then

they hung overhead, but did not reply to calls.

Calhoun arrived at the space-port with Murgatroyd riding on his shoulder. A bewildered officer in a sag-suit halted him.

"I've come," said Calhoun, "to speak to the admiral. My name is Calhoun and I'm Med Service, and I think I met the Admiral at a banquet a few weeks ago. He'll remember me."

"You'll have to wait," protested the officer. "There's some trouble—"

"Yes," said Calhoun. "I know about it. I helped design it. I want to explain it to the admiral. He needs to know what's happened, if he's to take appropriate measures."

There were jitterings. Many men in sag-suits had still no idea that anything had gone wrong. Some appeared, brightly carrying loot. Some hung eagerly around the airlocks of ships on the grid tarmac, waiting their turns to stand in corrosive gases for the decontamination of their suits, when they would burn the outer layers and step, aseptic and happy, into a Wealdian ship again. There they could think how rich they were going to be back on Weald.

But the situation aloft was bewildering and very, very ominous. There was strident argument. Presently Calhoun stood before the Waldean admiral.

"I came to explain something," said Calhoun pleasantly. "The situation has changed. You've noticed it, I'm sure."

The admiral glared at him through two layers of plastic, which covered him almost like a gift-wrapped parcel.

"Be quick!" he rasped.

"First," said Calhoun, "there are no more blueskins. An epidemic of something or other has made the blue patches on the skins of Darrians fade out. There have always been some who didn't have blue patches. Now nobody has them."

"Nonsense!" rasped the admiral. "And what has that got to do with this situation?"

"Why, everything," said Calhoun mildly. "It means that Darrians can pass for Wealdians whenever they please. That they are passing for Wealdians. That they've been mixing with your men, wearing sag-suits exactly like the one you're wearing now. They've been going aboard your ships in the confusion of returning looters. There's not a ship now aloft, that has been aground today, that hasn't from one to fifteen Darrians—no longer blueskins—on board."

The admiral roared. Then his face turned gray.

"You can't take your fleet back to Weald," said Calhoun gently, "if you believe its crews have been exposed to carriers of the

Dara plague. You wouldn't be allowed to land, anyhow."

The admiral said through stiff lips;

"I'll blast—"

"No," said Calhoun, again gently. "When you ordered all ships alerted for action, the Darrians on each ship released panic-gas. They only needed tiny, pocket-sized containers of the gas for the job. They had them. They only needed to use air-tanks from their sag-suits to protect themselves against the gas. They kept them handy. On nearly all your ships aloft your crews are crazy from panic-gas. They'll stay that way until the air is changed. Darrians have barricaded themselves in the control-rooms of most if not all your ships. You haven't got a fleet. If the few ships that will obey your orders, drop one bomb, our fleet off Weald will drop fifty. I don't think you'd better order offensive action. Instead, I think you'd better have your fleet medical officers come and learn some of the facts of life. There's no need for war between Dara and Weald, but if you insist . . ."

The Admiral made a choking noise. He could have ordered Calhoun killed, but there was a certain appalling fact. The men aground from the fleet were breathing Wealdian air from tanks. It would last so long only. If they were taken on board the

still obedient ships overhead, Darians would unquestionably be mixed with them. There was no way to take off the parties now aground without exposing them to contact with Darians, on the ground or in the ships. There was no way to sort out the Darians.

"I—I will give the orders," said the admiral thickly. "I—do not know what you devils plan, but—I don't know how to stop you."

"All that's necessary," said Calhoun warmly, "is an open mind. There's a misunderstanding to be cleared up, and some principles of planetary health practises to be explained, and a certain amount of prejudice that has to be thrown away. But nobody need die of changing their minds. The Interstellar Medical service has proved that over and over!"

Murgatroyd, perched on his shoulder, felt that it was time to take part in the conversation. He said;

*"Chee-chee!"*

"Yes," agreed Calhoun. "We do want to get the job done. We're behind schedule now."

IT WAS not, of course, possible for Calhoun to leave immediately. He had to preside at various meetings of the medical officers of the fleet with the health officials of Dara. He had to make

explanations, and correct misapprehensions, and delicately suggest such biological experiments as would prove to the doctors of Weald that there was no longer a plague on Dara, whatever had been the case three generations before. He had to sit by while an extremely self-confident young Darian doctor named Korvan rather condescendingly demonstrated that the former blue pigmentation was a viral product quite unconnected with the plague, and that it had been wiped out by a very trivial epidemic of—such and such. Calhoun regarded that young man with a detached interest. Maril thought him wonderful, even if she had to give him the material for his work. Calhoun shrugged and went on with his work:

The return of loot. Mutual, full, and complete agreement that Darians were no longer carriers of plague, if they had ever been. Unless Weald convinced other worlds of this, Weald itself would join Dara in isolation from neighboring worlds. A messenger ship to recall the twenty-seven ships once floating in orbit about Weald. Most of them would be used for some time, now, to bring beef from Orede. Some would haul more grain from Weald. It would be paid for. There would be a need for commercial missions to be exchanged between Weald and Dara.

It was a full week before he could go to the little Med Ship and prepare for departure. Even then there were matters to be attended to. All the food-supplies that had been removed could not be replaced. There were biological samples to be replaced and some to be destroyed . . . The air-tanks . . .

Maril came to the Med Ship again when he was almost ready to leave. She did not seem comfortable.

"I wish you could like Korvan," she said regretfully.

"I don't dislike him," said Calhoun. "I think he will be a most prominent citizen, in time. He has all the talents for it."

Maril smiled very faintly.

"But you don't admire him."

"I wouldn't say that," protested Calhoun. "After all, he is attractive to you, which is something I couldn't manage."

"You didn't try," said Maril. "Just as I didn't try to be fascinating to you. Why?"

Calhoun spread out his hands. But he looked at Maril with respect. Not every woman could have faced the fact that a man did not feel impelled to make passes at her. It is simply a fact that has nothing to do with desirability or charm or anything else.

"You're going to marry him," he said. "I hope you'll be very happy."

"He's the man I want," said Maril frankly. "He looks forward to splendid discoveries. I'm sorry it's so important to him."

Calhoun did not ask the obvious question. Instead, he said thoughtfully;

"There's something you could do . . . It needs to be done. The Med Service in this sector has been badly handled. There are a number of—discoveries that need to be made. I don't think your Korvan would relish having things handed to him on a visible silver platter. But they should be known . . ."

Maril said wily;

"I can guess what you mean. I never went into detail about how the blueskin markings disappeared, but a few hints—You've got books for me?"

Calhoun nodded. He brought them to her.

"If we only fell in love with each other, Maril, we'd be a team! Too bad! These are a wedding present you'll do well to hide."

She put her hands in his.

"I like you—almost as much as I like Murgatroyd! Yes! Korvan will never know, and he'll be a great man." Then she added defensively, "And not just from these books! He'll make his own wonderful discoveries."

"Of which," said Calhoun, "the most remarkable is you. Good luck Maril!"

**P**RESENTLY the Med Ship lifted. Calhoun aimed it for the next planet on the list of those he was to visit. After this one more he'd return to sector headquarters with a biting report to make on the way things had been handled before him. He said;

"Overdrive coming, Murgatroyd!"

Then the stars went out and there was silence, and privacy, and a faint, faint, almost unhearable series of background sounds which kept the Med Ship from being totally unendurable.

Long, long days later the ship broke out of overdrive and Calhoun guided it to a round and sunlit world. In due time he

thumped the communicator-button.

"Calling ground," he said crisply. "Calling ground! Med Ship Aesclepus Twenty reporting arrival and asking coördinates for landing. Purpose of landing, planetary health inspection. Our mass is fifty standard tons."

There was a pause while the beamed message went many, many thousands of miles. Then the speaker said;

"Aesclepus Twenty, repeat your identification!"

Murgatroyd said;

"Chee-chee? Chee?"

Calhoun sighed.

"That's right, Murgatroyd! Here we go again!"

**THE END**



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## FACT

When disaster strikes a station in space—man the . . .

# COSMIC LIFEBOAT

By FRANK TINSLEY

RECENT previews of the Saturn and Nova projects, and the eventual emergence of other multimillion-pound-thrust-power-plants for space vehicles, promise a dramatic breakthrough in tomorrow's payload capabilities. The ability of these herculean machines to lift hundreds of tons of cargo into orbit in a single flight will bring the day of really large, space-assembled satellites far closer than we now realize.

With the advent of such satellite laboratories, carrying considerable crews of engineers and research scientists, will come a host of new problems, both human and technological. Not only must these highly trained individuals be transported to and from their stations and supplied with the means of living and working in reasonable comfort, but for their peace of mind they must also be guaranteed a sure means of escape in the event of mechanical malfunction or out-

right disaster. The latter could take several forms—deliberate military attack, accidental collision with an off-beam rocket vehicle, or the billion-to-one chance of being hit by a meteorite of dangerous size.

Without quite realizing it, we are already attacking this important problem of human safety in space. Project Mercury, our first attempt to place a man in orbit, is developing techniques and equipment to sustain life, conquer the fiery heat of re-entry into the atmosphere, and provide for dependable communication and rescue. So actually, we can consider this one-man capsule as a test vehicle for the future as well as a current step in the conquest of space. When all the bugs are eliminated and it has been thoroughly proven in practical use, Mercury will provide the basis for larger, more elaborate, multi-place rescue designs. Our illustration shows one of the pos-

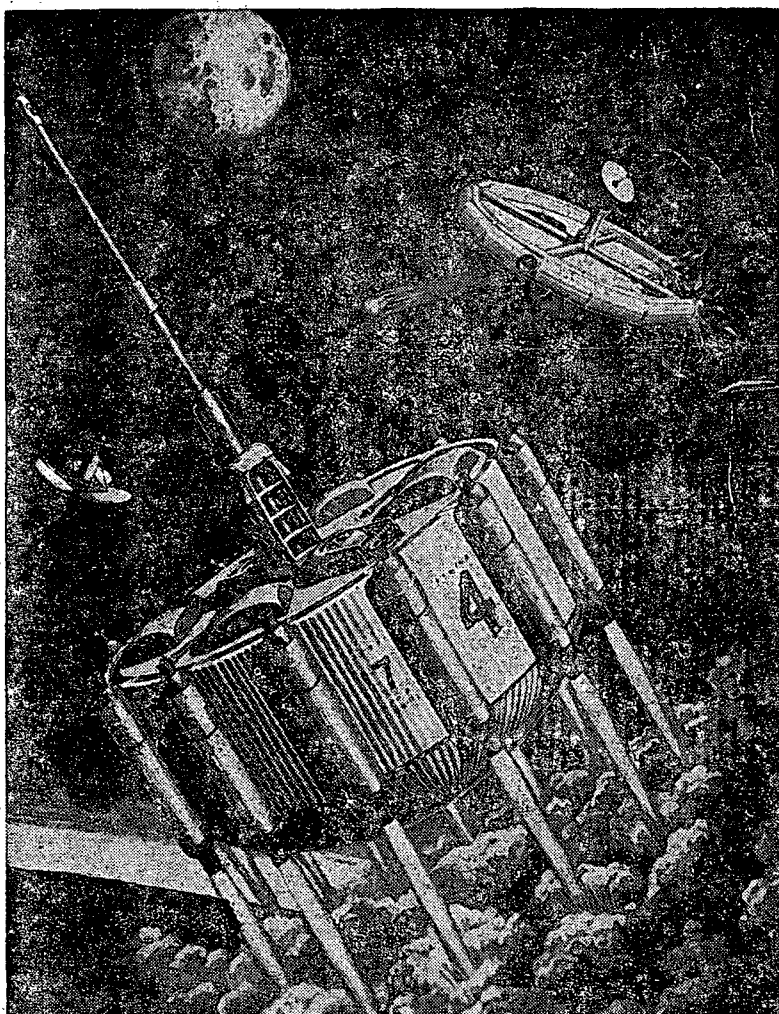
sible forms that such a "cosmic lifeboat" may take.

THE space station shown is designed like a huge wheel revolving around a stationary axle". The turning wheel of course generates centrifugal force, the pull of which grows progressively stronger as one moves outward from the central "hub". In the wheel's tire-like rim, where the living and working quarters are principally located, this outward pull approximates that of normal earth gravity. To visualize life in this artificial world, we must remember that the lower deck rests on the inner surface of the tire tread and that to someone moving about on that floor, or the level above it, the hub is always "up". Compartments in the hub and axle are reached by "ascending" in elevators which move up and down through the four "spokes". Inside this area of induced gravity and controlled atmosphere, the station's crew lead normal lives and dress in normal clothes. The carbon-dioxide they exhale is absorbed by plants grown in hydroponic gardens, and in the natural growth process new oxygen is manufactured. Thus, fresh, conditioned air is constantly generated and circulated. Power is supplied by solar batteries operating 24 hours a day. Heat or cold can be drawn from the sun

or surrounding space. The station is therefore self-supporting in all basic requirements. It is only when these balanced conditions are upset by mechanical failure or outside emergency that some form of escape vehicle is necessary.

The number of escape capsules provided depends, of course, on the satellite's size and the number of its crew. In the design shown—a relatively modest station with a complement of 30 to 35—four "lifeboats" are ample. They nest snugly in the outer tread, one opposite the end of each spoke and convenient to its elevator exit. These escape chambers in the rim are bulkheaded off to form air- and pressure-tight compartments. Inside them, the boats rest on vertical launching rails set into the walls of cylindrical pits, their top decks and hatches flush with the compartment floors.

The lifeboats are round, built like king-size coffee tins, with flat tops and doe-shaped bottoms. They are jacketed with ablation-type heat shields designed to combat the roasting temperatures of high speed reentry into the earth's atmosphere. Mounted on the exterior of the shield is a ring of combination launching and retro-rockets. The former, set into the inner end of each rocket, are small RATO bottles, just suffi-



cient to blow the boat clear of its parent station. The latter are longer lived and more powerful, designed to slow the lifeboat's speed and bring it out of orbit when the calculated exit point is

reached. The final discharge of the rockets then further decelerates the vehicle as it starts its re-entry dive. After burnout, the rocket shells are jettisoned. The heat shields, fluted to increase

their effective area, are offset from the boat body and mounted in interlocking sections around its sides and bottom. These are jettisoned in turn when re-entry has been completed. The boat is thus stripped and lightened for its final parachute landing in a pre-selected sea area.

A retractable mast, set in the center of the lifeboat's upper deck, serves several purposes. When the boat is nested in the parent station the partially telescoped mast extends up through a hatchway in the escape compartment's upper deck and doubles as a "fireman's pole" for fast exits from that level. After emergency ejection, while the boat is traveling through airless space, the mast is extended to its full length and functions as a mass-balanced, stabilizing tail—much like the sticks on Fourth of July rockets. When the boat has finally 'chuted down and is floating on the surface of the sea, the mast serves as a periscope for rough water lookout, a radio antenna mount and a support for the combination sunshade, sail and radar target with which the craft is equipped.

**T**HE lifeboat hull is of light metal construction, double-walled and interlined with insulation. It need be stressed only to meet the moderate launching and landing shocks, and its

weight is kept as low as possible. Set in its upper deck on either side of the mast housing are twin hatches of generous size to halve entrance and exit time. Ladders lead down the housing root below deck to an ample central floor space at the bottom. This can be increased by folding down the elevated leg-rests of the Mercury type deceleration beds. There are eight of these radiating outward from the boat's center. Each is custom-moulded to its assigned occupant and is fitted with safety-straps, oxygen mask and all necessary equipment. The perimeter walls of the cabin are lined with racks and lockers containing individual survival gear, compressed air tanks, food and water. Although the capsule is pressurized and air-conditioned during flight, escapees are trained to don emergency pressure suits in case of mechanical failure.

Designed primarily for water landings, the lifeboat is completely seaworthy and carries supplies for several weeks. Radio, flares and smoke signals are provided, as well as fishing kits, seasickness pills, shark repellent and all the customary survival equipment. An outside, inflated ring of rubberized fabric girdles the boat's topsides. This assists the craft's flotation and prevents tipping. It can be patched and reinflated with the usual life-

raft gear. On the underside of the boat is a companion stabilizer in the form of a four foot, tubular keel, weighted on its lower end. Retracted into the root of the mast housing during flight, this counterpoise steadies the craft in rough seas. Under these conditions, life-lines are rigged to protect the watch on deck. They are attached to folding stanchions and the parachute bin covers, which are raised and locked in an upright position to form bulwarks. The inflated fabric sail/parasol, described earlier, may be surfaced with solar batteries to provide auxiliary power for lights, radio, etc.

\* \* \*

LET'S substitute ourselves for a space station crew member and see just how this rescue system works. The first indication of trouble flashes on a radarscope in the station's Command Post. A flickering, fast-spreading "blip" signals the approach of an unidentified object heading toward Earth on a path dangerously close to our satellite. The million-to-one risk faced by every working astronaut has suddenly become imminent. It is a high-mass meteorite on the loose!

Tracking switches are flipped and a miniaturized computer compares the size, speed and bearing of the cosmic thunderbolt with the station's orbital

course and velocity. The answer snaps back in a split second—COLLISION COURSE! Automatically, alarm gongs reverberate through the labs and corridors. Pulsing alarm lights flash above each desk and workbench and the muffled slam of airtight doors signal the sealing of the station into a complex of independently pressurized compartments. Well trained in escape procedures, the twenty-odd engineers and researchers who comprise her crew drop pencils and instruments and reach for their emergency pressure suits. In all probability, this is just another drill, but they are too well indoctrinated in the dangers of a space blow-out to hesitate.

In the Physics Lab we follow suit, hurrying through the routine of checking each other's gear. The pressure gauge in the lab door tells us that the corridor outside is still up to normal and we press the "open" button. This must be one of the Skipper's dry runs. Dutifully, we sprint toward the escape chamber, responding to the inevitable excitement of the drill. Then, completely unexpected, comes a crash of impact and the rending explosion of liberated air!

The shock sends us sprawling. Although the still whirling station maintains its rim gravity, its suddenly eccentric weaving keeps us rolling helplessly. Even

through the sound-deadening helmets, the din of tearing, wrenching metal presages the imminent collapse of the whole structure. This is no drill we are running through—no theatrical pretense of danger. *This is it!* With a supreme effort, we struggle to our feet and reach the end of the heaving corridor. The door gauge brings a thrill of hope—the pressure in the escape chamber is still intact! We punch the operating button.

Inside, the can-shaped escape capsule hangs waiting in its rails, hatches open, telescoped mast reaching up through the emergency hatch in the floor above. As we hesitate, a pressure-suited figure plummets down like a fireman responding to an alarm and disappears into the further hatch. You leap through the nearer opening and I scramble down in your wake. The eight-man capsule is only half full and as we hit the deck, the Commander's eyebrows go up in query. "This is for REAL! What's keeping the others?"

"Did you look into the next bay?" asks the Astronomy Technician who had just slid down the mast. "I got a glimpse as I came down in the elevator. Whatever hits us, came through right next door and the whole rim is in ribbons!"

"Sure?" The Boat Commander stares upward through the silent

manholes. There is no further sign of life. "Okay," he mutters in a voice that has gone suddenly hoarse, "Secure hatches!"

WE straighten out on our deceleration beds, watching the hatch-lids descend and latch with grim finality. After a last swift check, the Commander's arms settle in their padded troughs and he throws the take-off switch. At the top of the central mast-housing, an illuminated count-down panel snaps on and every eye fixes on the fitting numerals. "Four—three—two—one—ZERO!" There is a muted roar as the take-off bottles fire and the capsule quivers in its tracks.

Our bodies rise against the acceleration; then settle back as the straps curb us and the lifeboat slows again. In the periscope reflector, we can see the great wheel-like station whirling crazily as it falls astern. We wonder how the boats from the other sections are doing. Our own "can" has steadied into a slightly lower and faster orbit, its lighter weight drawing it downward in a smooth spiral. A voice sounds from somewhere in the darkened cabin. "We made it!"

"So far . . ." replied the Commander drily. "Now, let's see where we are and how accurately we can set this thing down!" Stretching out his hand, he



reaches for the guidance gear.

The compact mechanism goes to work, calculating our speed, altitude and direction, feeding the data into a computer and storing the resulting figures in tiny memory tubes. Pre-set for a rescue area in the Caribbean, this astrogator will fire our belt of retro-rockets at a precise point in our new orbit. This, fortunately, is not far off. In a few minutes a warning light snaps on and we feel the "retros" check our speed. The toughest part of the descent is now at hand—the strain of radical deceleration and the oven-like heat of re-entry into the atmosphere.

The capsule's response to the first thin film of air is scarcely noticeable. Only the gradual color change in the white surface of the heat shield betrays its rising temperature. The atmosphere thickens and the colors progress through the yellow spectrum and on to a rosy red. As the resistance slows the vehicle down, increasing friction takes its fiery toll. Soon, the shield is red hot and its ablative surface begins to sluff off in a trail of molten particles. Inside, protected by an intervening air space and the inner, insulated hull, we watch the temperature gauge level off at a bearable 95 degrees. The heat resistant materials perfected through research during the first Mercury

Project permit us to sail through the heat barrier in safety and relative comfort.

Another mile or so and our escape capsule has passed the critical point. As its speed is progressively checked the friction declines and the shielding surfaces cease to ablate. Slowly, the red glow cools to pink and then back through the yellow tones. At last, it darkens to a charred, molten black and the vehicle arcs downward into the troposphere. A controllable velocity has now been attained. As this registers on the guidance mechanism, hinged covers fly open and pilot parachutes pop up from their deck lockers. At the same time, explosive charges blow away the heavy heat shield in smoking sections. This really lightens the craft, and when the main 'chutes blossom their shock is not too bad. Under their restraining brake action the capsule swings gently toward the sea below.

Watching in the periscope reflector we see the rising rollers and brace ourselves for the splash. Absorbed by the resilient beds, the shock is minor. A moment later the 'chutes automatically disconnect and the flotation bags inflate. We open the hatches and scramble up the ladders. We have demonstrated in actual practice that a space station can be evacuated safely. **THE END**



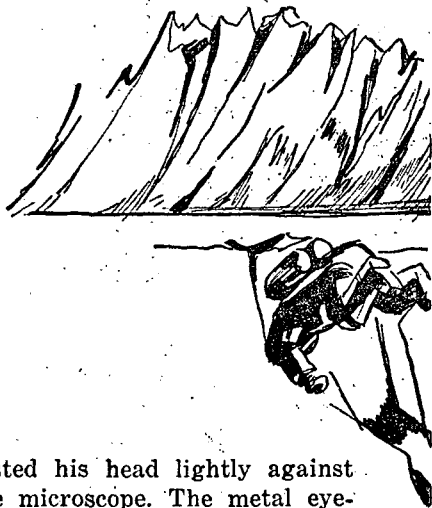
By  
GORDON  
DICKSON

# Whatever Gods There Be

***Out There, there is no day, no night. But for some men the blackness of the pit still spreads from pole to pole, and then they find out whether they are possessed of Henley's "Unconquerable soul."***

AT 1420 hours of the eighth day on the moon, Major Robert L. (Doc) Greene was standing over a slide in a microscope in the tiny laboratory of Moon Ship Groundbreaker II. There was a hinged seat that could be pulled up and locked in position, to sit on; but Greene never used it. At the moment, he had been taking blood counts on the four of them that were left in the crew, when a high white and a low red blood cell count of one sample had caught his attention. He had proceeded to follow up the tentative diagnosis this suggested, as coldly as if the sample had been that of some complete stranger. But, suddenly, the scene in the field of the microscope had blurred. And for a moment he closed both eyes and

rested his head lightly against the microscope. The metal eyepiece felt cool against his eyelid; and caused an after-image to blossom against the hooded retina—as of a volcanic redness welling outward against a blind-dark background. It was his own deep-held inner fury exploding against an intractable universe.



Illustrated by WEST



Caught up in this image and his own savage emotion, Greene did not hear Captain Edward Kronzy, who just then clumped into the lab, still wearing his moonsuit, except for the helmet.

"Something wrong, Bob?" asked Kronzy. The youngest of the original six-officer crew, he was about average height—as were all the astronauts—and his reddish, cheerful complexion contrasted with shock of stiff black hair and scowling, thirty-eight year old visage of Greene.

"Nothing," said Greene, harshly, straightening up and slipping the slide out of the microscope into a breast pocket. "What's the matter with you?"

"Nothing," said Kronzy, with a pale grin that only made more marked the dark circles under his eyes. "But Hal wants you outside to help jacking up."

"All right," said Greene. He put the other three slides back in their box; and led the way out of the lab toward the airlock. In the pocket, the glass slide pressed sharp-edged and unyielding against the skin of his chest, beneath. It had given Greene no choice but to diagnose a cancer of the blood—leukemia.

TEN MINUTES later, Greene and Kronzy joined the two other survivors of Project Moon Landing outside on the moon's surface.

These other two—Lt. Colonel Harold (Hal) Barth, and Captain James Wallach—were some eighty-five feet above the entrance of the airlock, on the floor of the Mare Imbrium. Greene and Kronzy came toiling up the rubbled slope of the pit where the ship lay; and emerged onto the crater floor just as Barth and Wallach finished hauling the jack into position at the pit's edge.

Around them, the crater floor on this eighth day resembled a junk yard. A winch had been set up about ten feet back from the pit five days before; and now oxygen tanks, plumbing fixtures, spare clothing, and a host of other items were spread out fanwise from the edge where the most easily ascendible slope of the pit met the crater floor—at the moment brilliantly outlined by the sun of the late lunar 'afternoon'. A sun now alone in the sky, since the Earth at the moment was on the other side of the moon. A little off to one side of the junk were two welded metal crosses propped erect by rocks.

The crosses represented 1st Lieutenant Saul Moulton and Captain Luthern J. White, who were somewhere under the rock rubble beneath the ship in the pit.

"Over here, Bob," Greene heard in the earphones of his helmet. He looked and saw Barth

beckoning with a thick-gloved hand. "We're going to try setting her up as if in a posthole."

Greene led Kronzy over to the spot. When he got close, he could see through the faceplates of their helmets that the features of the other two men, particularly the thin, handsome features of Barth, were shining with sweat. The eighteen-foot jack lay with its base end projecting over a hole ground out of solid rock.

"What's the plan?" said Greene.

Barth's lips puffed with a weary exhalation of breath before he answered. The face of the Moon Expedition's captain was, finedrawn with exhaustion; but, Greene noted with secret satisfaction, with no hint of defeat in it yet. Greene relaxed slightly, sweeping his own grim glance around the crater, over the hole, the discarded equipment and the three other men.

A man, he thought, could do worse than to have made it this far.

"One man to anchor. The rest to lift," Barth was answering him.

"And I'm the anchor?" asked Greene.

"You're the anchor," answered Barth.

Greene went to the base end of the jack and picked up a length of metal pipe that was lying ready there. He shoved it into the hole

and leaned his weight on it, against the base of the jack.

"Now!" he called, harshly.

The men—at the other end heaved. It was not so much the jack's weight, under moon gravity, as the labor of working in the clumsy moonsuits. The far end of the jack wavered, rose, slipped gratingly against Greene's length of pipe—swayed to one side, lifted again as the other three men moved hand under hand along below it—and approached the vertical.

The base of the jack slipped suddenly partway into the hole, stuck, and threatened to collapse Greene's arms. His fingers were slippery in the gloves, he smelled the stink of his own perspiration inside the suit, and his feet skidded a little in the surface dust and rock.

"Will it go?" cried Barth gaspingly in Greene's earphones.

"Keep going!" snarled Greene, the universe dissolving into one of his white-hot rages—a passion in which only he and the jack existed; and it must yield. "Lift, damn you! Lift!"

THE pipe vibrated and bent. The jack swayed—rose—and plunged suddenly into the socket hole, tearing the pipe from Greene's grasp. Greene, left pushing against nothing, fell forward, then rolled over on his back. Above him, twelve pro-

truding feet of the jack quivered soundlessly.

Greene got to his feet. He was wringing wet. Barth's faceplate suddenly loomed before him.

"You all right?" Barth's voice asked in his earphones.

"All right?" said Greene. He stared; and burst suddenly into loud raucous laughter, that scaled upward toward uncontrollability. He choked it off. Barth was still staring at him. "No, I broke my neck from the fall," said Greene roughly. "What'd you think?"

Barth nodded and stepped back. He looked up at the jack.

"That'll do," he said. "We'll get the winch cable from that to the ship's nose and jack her vertical with no sweat."

"Yeah," said Kronzy. He was standing looking down into the pit. "No sweat."

The other three turned and looked into the pit as well, down where the ship lay at a thirty degree angle against one of the pit's sides. It was a requiem moment for Moulton and White who lay buried there; and all the living men above felt it at the same time. Chance had made a choice among them—there was no more justice to it than that.

The ship had landed on what seemed a flat crater floor. Landed routinely, upright, and apparently solidly. Only, twenty hours later, as Moulton and

White had been outside setting up the jack they had just assembled—the jack whose purpose was to correct the angle of the ship for takeoff—chance had taken its hand.

What caused it—lunar landslide, vibration over flawed rock, or the collapse of a bubble blown in the molten rock when the moon was young—would have to be for those who came after to figure out. All the four remaining men who were inside knew was that one moment all was well; and the next they were flung about like pellets in a rattle that a baby shakes. When they were able to get outside and check, they found the ship in a hundred foot deep pit, in which Moulton and White had vanished.

"Well," said Barth, "I guess we might as well knock off now, and eat. Then, Jimmy—" his faceplate turned toward Wallach. "you and Ed can come up here and get that cable attached while I go over the lists you all gave me of your equipment we can still strip from the ship; and I'll figure out if she's light enough to lift on the undamaged tubes. And Bob—you can get back to whatever you were doing."

"Yeah," said Greene. "Yeah, I'll do that."

AFTER they had all eaten, Greene shut himself up once

more in the tiny lab to try to come to a decision. From a military point of view, it was his duty to inform the commanding officer—Barth—of the diagnosis he had just made. But the peculiar relationship existing between himself and Barth—

There was a knock on the door.

"Come on in!" said Greene.

Barth opened the door and stuck his head in.

"You're not busy."

"Matter of opinion," he said. "What is it?"

Barth came all the way in, shut the door behind him, and leaned against the sink.

"You're looking pretty washed out, Bob," he said.

"We all are. Never mind me," said Greene. "What's on your mind?"

"A number of things," said Barth. "I don't have to tell you what it's like with the whole Space Program. You know as well as I do."

"Thanks," said Greene.

The sarcasm in his voice was almost absent-minded. Insofar as gratitude had a part in his makeup, he was grateful to Barth for recognizing what few other people had—how much the work of the Space Program had become a crusade to which his whole soul and body was committed.

"We just can't afford not to succeed," Barth was saying.

It was the difference between them, noted Greene. Barth admitted the possibility of not succeeding. Nineteen years the two men had been close friends—since high school. And nowadays, to many people, Barth was the Space Program. Good-looking, brilliant, brave—and possessing that elusive quality which makes for newsworthiness at public occasions and on the tv screens—Barth had been a shot in the arm to the Program these last six months.

And he had been needed. No doubt the Russian revelations of extensive undersea developments in the Black Sea Area had something to do with it. Probably the lessening of world tensions lately had contributed. But it had taken place—one of those unexplainable shifts in public interest which have been the despair of promotion men since the breed was invented.

The world had lost much of its interest in spatial exploration.

No matter that population pressures continued to mount. No matter that natural resources depletion was accelerating, in spite of all attempt at control. Suddenly—space exploration had become old hat; taken for granted.

And those who had been against it from the beginning began to gnaw, unchecked, at the roots of the Program. So that

men like Barth, to whom the Space Program had become a way of life, worried, seeing gradual strangulation as an alternative to progress. But men like Greene, to whom the Program had become life itself, hated, seeing *no* alternative.

"Who isn't succeeding?" said Greene.

"We lost Luthern and Saul," said Barth, glancing downward almost instinctively toward where the two officers must be buried. "We've got to get back."

"Sure. Sure," said Greene.

"I mean," said Barth, "we've got to get back, no matter what the cost. We've got to show them we could get a ship up here and get back again. You know, Bob—" he looked almost appealingly at Greene—"the trouble with a lot of people who're not in favor of the Project is they don't really believe in the moon or anyplace like it. I mean—the way they'd believe in Florida, or the South Pole. They're sort of half-clinging to the notion it's just a sort of cut-out circle of silver paper up in the air, there, after all. But if we go and come back, they've *got* to believe!"

"Listen," said Greene. "Don't worry about people like that. They'll all be dead in forty years; anyway. —Is this all you wanted to talk to me about?"

"No. Yes—I guess," said Barth. He smiled tiredly at

Greene. "You pick me up, Bob. I guess it's just a matter of doing what you have to."

"Do what you're going to do," said Greene with a shrug. "Why make a production out of it?"

"Yes." Barth straightened up. "You're right. Well, I'll get back to work. See you in a little while. We'll get together for a pow-wow as soon as Ed and Jimmy get back in from stringing that cable."

"Right," said Greene. He watched the slim back and square shoulders of Barth go out the door and slumped against the sink, himself, chewing savagely on a thumbnail. His instinct had been right, he thought; it was not the time to tell Barth about the diagnosis.

And not only that. Nineteen years had brought Greene to the point where he could, in almost a practical sense, read the other man's mind. He had just done so; and right now he was willing to bet that he had a new reason for worry.

Barth had something eating on him. Chewing his fingernail, Greene set to work to puzzle out just what that could be.

A fist hammered on the lab door. "Bob?"

"What?" said Greene, starting up out of his brown study. Some little time had gone by. He recognized his caller now. Kronzy.



"Hal wants us in the control cabin, right away."

"Okay. Be right there."

Greene waited until Kronzy's boot sounds had gone away in the distance down the short corridor and up the ladder to the level overhead. Then he followed, more slowly.

He discovered the other four already jammed in among the welter of instruments and controls that filled this central space of the ship.

"What's the occasion?" he asked, cramming himself in between the main control screen and an acceleration couch.

"Ways and means committee," said Barth, with a small smile. "I was waiting until we were all together before I said anything." He held up a sheet of paper. "I've just totalled up all the weight we can strip off the ship, using the lists of dispensable items each of you made up, and checked it against the thrust we can expect to get safely from the undamaged tubes. We're about fifteen hundred Earth pounds short. I made the decision to drop off the water tanks, the survival gear, and a few other items, which brings us down to being about five hundred pounds short."

He paused and laid down the paper on a hinge-up desk surface beside him.

"I'm asking for suggestions," he said.

Greene looked around the room with sudden fresh grimness. But he saw no comprehension yet, on the faces of the other two crew members.

"How about—" began Kronzy; then hesitated as the words broke off in the waiting silence of the others.

"Go on, Ed," said Barth.

"We're not short of fuel."

"That's right."

"Then why," said Kronzy, "can't we rig some sort of auxiliary burners—like the jato units you use to boost a plane off, you know?" He glanced at Greene and Wallach, then back at Barth. "We wouldn't have to care whether they burnt up or not—just as long as they lasted long enough to get us off."

"That's a good suggestion, Ed," said Barth, slowly. "The only hitch is, I looked into that possibility, myself. And it isn't possible. We'd need a machine shop. We'd need—it just isn't possible. It'd be easier to repair the damaged tubes."

"I suppose that isn't possible, either?" said Greene, sharply.

Barth looked over at him, then quickly looked away again.

"I wasn't serious," Barth said. "For that we'd need Cape Canaveral right here beside us. —And then, probably not."

He looked over at Wallach.

"Jimmy?" he said.

Wallach frowned.

"By golly, Hal," he said. "I don't know. I can think about it a bit. . . ."

"Maybe," said Barth, "That's what we all ought to do. Everybody go off by themselves and chew on the problem a bit." He turned around and seated himself at the desk surface. "I'm going to go over these figures again."

Slowly, they rose. Wallach went out, followed by Kronzy. Greene hesitated, looking at Barth, then he turned away and left the room.

**A**LONE once more in the lab, Greene leaned against the sink again and thought. He did not, however, think of mass-to-weight ratios or clever ways of increasing the thrust of the rocket engines.

Instead, he thought of leukemia. And the fact that it was still a disease claiming its hundred per cent of fatalities. But also, he thought of Earth with its many-roomed hospitals; and the multitude of good men engaged in cancer research. Moreover, he thought of the old medical truism that while there is life, there is hope.

All this reminded him of Earth, itself. And his thoughts veered off to a memory of how pleasant it had been, on occasion, after working all the long night through, to step out

through a door and find himself unexpectedly washed by the clean air of dawn. He thought of vacations he had never had; fishing he had never done, and the fact that he might have found a woman to love him if he had ever taken off enough time to look for her. He thought of good music—he had always loved good music. And he remembered that he had always intended someday to visit La Scala.

Then—hauling his mind back to duty with a jerk—he began to scowl and ponder the weak and strong points that he knew about in Barth's character. Not, this time, to anticipate what the man would say when they were all once more back in the control cabin. But for the purpose of circumventing and trapping Barth into a position where Barth would be fenced in by his own principles—the ultimate ju-jitsu of human character manipulation. Greene growled and muttered to himself, in the privacy of the lab marking important points with his forefinger in the artificial and flatly odorous air.

He was still at it, when Kronzy banged at his door again and told him everybody else was already back in the control cabin.

**W**HEN he got to the control cabin again, the rest were in almost the identical positions they had taken previously.

"Well?" said Barth, when Greene had found himself a niche of space. He looked about the room, at each in turn. "How about you, Jimmy?"

"The four acceleration couches we've still got in the ship— With everything attached to them, they weigh better than two hundred apiece," said Wallach. "Get rid of two of them, and double up in the two left. That gets rid of four of our five hundred pounds. Taking off from the moon isn't as rough as taking off from Earth."

"I'm afraid it won't work," Kronzy commented.

"Why not?"

"Two to a couch, right?"

"Right."

"Well, look. They're made for one man. Just barely. You can cram two in by having both of them lying on their sides. That's all right for the two who're just passengers—but what about the man at the controls?" He nodded at Barth. "He's got to fly the ship. And how can he do that with half of what he needs to reach behind him, and the man next to him blocking off his reach at the other half?" Kronzy paused. "Besides, I'm telling you—half a couch isn't going to help hardly at all. You remember how the G's felt, taking off? And this time all that acceleration is going to be pressing against one set of ribs and a hipbone."

He stopped talking then.

"We'll have to think of something else. Any suggestions, Ed?" said Barth.

"Oh." Kronzy took a deep breath. "Toss out my position taking equipment. All the radio equipment, too. Shoot for Earth blind, deaf and dumb; and leave it up to them down there to find us and bring us home."

"How much weight would that save?" asked Wallach.

"A hundred and fifty pounds—about."

"A hundred and fifty!" Where'd you figure the rest to come from?"

"I didn't know," said Kronzy, wearily. "It was all I could figure to toss, beyond what we've already planned to throw out. I was hoping you other guys could come up with the rest."

He looked at Barth.

"Well, it's a good possibility, Ed," said Barth. He turned his face to Greene. "How about you, Bob?"

"Get out and push!" said Greene. "My equipment's figured to go right down to the last gram. There isn't any more. You want my suggestion—we can all dehydrate ourselves about eight to ten pounds per man between now and takeoff. That's it."

"That's a good idea, too," said Barth. "Every pound counts." He looked haggard around the eyes, Greene noticed. It had the effect

of making him seem older than he had half an hour before during their talk in the lab; but Greene knew this to be an illusion.

"Thank you," Barth went on. "I knew you'd all try hard. I'd been hoping you'd come up with some things I had overlooked myself. More important than any of us getting back, of course, is getting the ship back. Proving something like this will work, to the people who don't believe in it."

Greene coughed roughly; and roughly cleared his throat.

"—We can get rid of one acceleration couch as Ed suggests," Barth continued. "We can dehydrate ourselves as Bob suggested, too; just to be on the safe side. That's close to two hundred and fifty pounds reduction. Plus a hundred and fifty for the navigational and radio equipment. There's three hundred and ninety to four hundred. Add one man with his equipment and we're over the hump with a safe eighty to a hundred pound margin."

He had added the final for a minute it did not register on those around him.

—Then, abruptly, it did.

"A man?" said Kronzy.

There was a second moment of silence—but this was like the fractionary interval of no sound in which the crowd in the grand-

stand suddenly realizes that the stunt flyer in the small plane is not coming out of his spin.

"I think," said Barth, speaking suddenly and loudly in the stillness, "that, as I say, the important thing is getting the ship back down. We've got to convince those people that write letters to the newspapers that something like this is possible. So the job can go on."

They were still silent, looking at him.

"It's our duty, I believe," said Barth, "to the Space Project. And to the people back there; and to ourselves. I think it's something that has to be done."

He looked at each of them in turn.

NOW Hal—wait!" burst out Wallach, as Barth's eyes came on him. "That's going a little overboard, isn't it? I mean—we can figure out something!"

"Can we?" Barth shook his head. "Jimmy—. There just isn't any more. If they shoot you for not paying your bills, then it doesn't help to have a million dollars in your debts add up to a million dollars and five cents. You know that. If the string doesn't reach, it doesn't reach. Everything we can get rid of on this ship won't be enough. Not if we want her to fly."

Wallach opened his mouth again; and then shut it. Kronzy

looked down at his boots. Greene's glance went savagely across the room to Barth.

"Well," said Kronzy. He looked up. Kronzy, too, Greene thought, now looked older. "What do we do—draw straws?"

"No," Barth said. "I'm in command here. I'll pick the man."

"Pick the man!" burst out Wallach, staring. "You—"

"Shut up, Jimmy!" said Kronzy. He was looking hard at Barth. "Just what did you have in mind, Hal?" he said, slowly.

"That's all," Barth straightened up in his corner of the control room. "The rest is my responsibility. The rest of you get back to work tearing out the disposable stuff still in the ship —"

"I think," said Kronzy, quietly and stubbornly, "we ought to draw straws."

"You—" said Wallach. He had been staring at Barth ever since Kronzy had told him to shut up. "You'd be the one, Hal?"

"That's all," said Barth, again. "Gentlemen, this matter is not open for discussion."

"The hell," replied Kronzy, "you say. You may be paper CO of this bunch; but we are just not about to play Captain-god-down-with-his-ship. We all weigh between a hundred-sixty and a hundred and eighty pounds and that makes us equal in the sight of mathematics. Now, we're go-

ing to draw straws; and if you won't draw, Hal, we'll draw one for you; and if you won't abide by the draw, we'll strap you in the other acceleration couch and one of us can fly the ship out of here. Right, Jimmy? Bob?"

He glared around at the other two. Wallach opened his mouth, hesitated, then spoke.

"Yes," he said. I guess that's right."

Kronzy stared at him suddenly. Wallach looked away.

"Just a minute," said Barth.

They looked at him. He was holding a small, black, automatic pistol.

"I'm sorry," Barth said. "But I am in command. And I intend to stay in command, even if I have to cripple every one of you, strip the ship and strap you into couches myself." He looked over at Greene. "Bob. You'll be sensible, won't you?"

GREENE exploded suddenly into harsh laughter. He laughed so hard he had to blink tears out of his eyes before he could get himself under control.

"Sensible!" he said. "Sure, I'll be sensible. And look after myself at the same time—even if it does take some of the glory out of it." He grinned almost maliciously at Barth. "Much as I hate to rob anybody else of the spotlight—it just so happens one of us can stay behind here until

rescued and live to tell his grandchildren about it."

They were all looking at him.

"Sure," said Greene. "There'll be more ships coming, won't there? In fact, they'll have no choice in the matter, if they got a man up here waiting to be rescued."

"How?" said Kronzy.

"Ever hear of suspended animation?" Greene turned to the younger man. "Deep-freeze. Out there in permanent shadow we've got just about the best damn deep freeze that ever was invented. The man who stays behind just takes a little nap until saved. In fact, from his point of view, he'll barely close his eyes before they'll be waking him up; probably back on Earth."

"You mean this?" said Barth.

"Of course, I mean it!"

Barth looked at Kronzy.

"Well, Ed," he said. "I guess that takes care of your objections."

"Hold on a minute!" Greene said. "I hope you don't think still you're going to be the one to stay. This is my idea; and I've got first pick at it. —Besides, done up in moonsuits the way we are outside there, I couldn't work it on anybody else. Whoever gets frozen has got to know what to do by himself; and I'm the only one who fits the bill." His eyes swept over all of them. "So that's the choice."

Barth frowned just slightly.

"Why didn't you mention this before, Bob?" he said.

"Didn't think of it—until you came up with your notion of leaving one man behind. And then it dawned on me. It's simple—for anyone who knows how."

Barth slowly put the little gun away in a pocket of his coveralls.

"I'm not sure still, I—" he began slowly.

"Why don't you drop it?"

blazed Greene in sudden fury.

"You think you're the only one who'd like to play hero? I've got news for you. I've given the Project everything I've got for a number of years now; but I'm the sort of man who gets forgotten easily. You can bet your boots I won't be forgotten when they have to come all the way from Earth to save me. It's my deal; and you're not going to cut me out of it. And what—" he thrust his chin at Barth—"are you going to do if I simply refuse to freeze anybody but myself? Shoot me?"

Barth shook his head slowly, his eyes shadowed with pain.

**R**OCKET signal rifle held athwart behind him and legs spread, piratically, Greene stood where the men taking off in the rockets could see him in the single control screen that was left in the ship. Below, red light blossomed suddenly down in the

pit. The moon's surface trembled under Greene's feet and the noise of the engines reached him by conduction through the rocks and soles of his boots.

The rocket took off.

Greene waved after it. And





then wondered why he had done so. Bravado? But there was no one around to witness bravado now. The other three were on their way to Earth—and they would make it. Greene walked over and shut off the equipment they had set up to record the takeoff. The surrounding area looked more like a junkyard than ever. He reached clumsy gloved fingers into an outside pocket of his moonsuit and withdrew the glass slide. With one booted heel he ground it into the rock.

The first thing they would do with the others would be to give them thorough physical checks, after hauling them out of the south Atlantic. And when that happened, Barth's leukemia would immediately be discovered. In fact, it was a yet-to-be-solved mystery why it had not shown up during routine medical tests before this. After that—well, while there was life, there was hope.

At any rate, live or die, Barth, the natural identification figure for these watching the Project, would hold the spotlight of public attention for another six months at least. And if he held it from a hospital bed, so much the better. Greene would pass and be forgotten between two bites of breakfast toast. But Barth—that was something else again.

The Project would be hard to

starve to death with Barth dying slowly and uncomplaining before the eyes of taxpayers.

Greene dropped the silly signal rifle. The rocket flame was out of sight now. He felt with gloved hands at the heat control unit under the thick covering of his moonsuit and clumsily crushed it. He felt it give and break. It was amazing, he thought, the readiness of the laity to expect miracles from the medical profession. Anyone with half a brain should have guessed that something which normally required the personnel and physical resources of a hospital, could not be managed alone, without equipment, and on the naked surface of the moon.

Barth would undoubtedly have guessed it—if he had not been blinded by Greene's wholly unfair implication that Barth was a glory-hunter. Of course, in the upper part of his mind, Barth must know it was not true; but he was too good a man not to doubt himself momentarily when accused. After that, he had been unable to wholly trust his own reasons for insisting on being the one to stay behind.

He'll forgive me, thought Greene. He'll forgive me, afterwards, when he figures it all out.

He shook off his sadness that had come with the thought. Barth had been his only friend. All his life, Greene's harsh, sardonic

exterior had kept people at a distance. Only Barth had realized that under Greene's sarcasms and jibes he was as much a fool with stars in his eyes as the worst of them. Well, thank heaven he had kept his weakness decently hidden.

He started to lie down, then changed his mind. It was probably the most effective position for what time remained; but it went against his grain that the men who came after him should find him flat on his back in this junkyard.

Greene began hauling equipment together until he had a sort of low seat. But when he had it all constructed, this, too was unsatisfactory.

Finally he built it a little higher. The moonsuit was very stiff, anyway. In the end, he needed only a little propping for his back and arms. He was turned in the direction in which the Earth would raise over the Moon's horizon; and, although the upper half of him was still in sunlight, long shadows of utter blackness were pooling about his feet.

Definitely, the lower parts of his moonsuit were cooling now. It occurred to him that possibly he would freeze by sections in this position. No matter, it was a relatively painless death. —Forgive me, he thought in Barth's direction, lost among the darkness of space and the light of the stars. —It would have been a quicker, easier end for you this way, I know. But you and I both were always blank checks to be filled out on demand and paid in to the account of Man's future. It was only then that we could have had any claim to lives of our own.

As Greene had now, in these final seconds.

He pressed back against the equipment he had built up. It held him solidly. This little, harmless pleasure he gave his own grim soul. Up here in the airlessness of the moon's bare surface, nothing could topple him over now.

When the crew of the next ship came searching, they would find what was left of him still on his feet.

THE END

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# FATHER

By DAN MORGAN

***Porsche betrayed a world for immortality.***

***Now he was about to receive his reward.***

I CLOSED the door quietly behind me. The red carpet was almost ankle deep and the walls were hung with shimmering drapes whose colors changed in an endlessly flowing pattern. The furniture was lushly padded, moulded to embrace the body in sensual comfort. All this richness for Porsche. He lived here like a fat white worm embedded in the nourishing carcass of a dead world.

He was lolling idly on a divan at the far end of the apartment, watching the tape of a strip show on the video screen. The screen was like a big window looking out on a life that no longer existed. The sash of the red and gold lounging pajamas was wrapped loosely over the gross flesh of his belly. His feet were bare, with pale toes like fat, corrupting maggots. No slippers . . . there was nowhere to go.

The years of soft living had

made him even more revolting than he seemed in the solid images. His chin had become multiple, a flabby extension of the fat that hung from his jowls. His hair was red gold, with immaculately flowing waves. It was false. He was as bald as . . . as a Centauran.

I must have stood there watching him for a full five minutes before he turned his head. The effect was immediate. His flabby, jewelled hand moved quickly to the control console at the side of his divan. The lights of the apartment brightened as the picture on the screen died. I could tell that he was not sure of what he saw, wondering if I was a dream, or some kind of waking hallucination. His mouth opened and closed soundlessly and his eyes bugged out as though they were on stalks.

"Hallo," I said.

The sound of my voice convinced him of my reality. Sliding his legs from the couch, he rose ponderously to his feet. His movements were soft and undulating as he waddled towards me. His eyes weren't surprised any more. They were narrowed and hot with an urgency the girlie shows no longer had the power to kindle. His pink tongue moved slowly over his drooping lower lip.

"You're beautiful," he breathed hoarsely. "Where did they find you. I thought . . ."

"That you were the last human being left?"

"Yes." His eyes were crawling over my body like small, filthy insects. "They promised me that if there was anybody . . . But that was years ago . . . and I never expected anything like you."

"You wanted someone, then?"

He was standing quite close to me and I could smell the sharp reek of sweat through his body perfume. One hand was raised, as though to touch me. I moved away along the shimmering wall, fighting back a mounting nausea.

"That's natural, isn't it?" His mouth gaped in a slobbering travesty of a smile. "A man needs some companionship. Don't be shy, baby. You and I can have a lot of fun together."

"After what you did?" I repressed a shudder.

He raised his hands, palms uppermost. "I had no choice if I wanted to go on living."

"Is that all it meant to you? a way of preserving your own filthy existence. You could have died. At least you would have known what you were dying for. Not like the rest of the world—they didn't even know what had hit them when the virus cloud englobed the planet."

"Cattle! Stupid animals!" he sneered. "I should have died for them?"

"Why not? They were your own race."

A bubbling laughter shook his gross form, his eyes sinking like wet stones in their caves of fat. "Nobody ever did me any favors. Why shouldn't I give the Centaurs the information they wanted? They promised me that I would live forever. Could anybody on Earth have offered me as much?"

"Information! You told them all the foulest things about the human race, its wars and its cruelties, the corruption in high places. You told them about *your* world, where men dealt in diseased souls and death—just one side of the picture. Things might have been different if you had mentioned some of the good things; the men, women and children who lived in hope, working for a clean, free life."

He grunted his contempt. "An

illusion! the world was rotten to the core, and all the people in it. You don't know what you're talking about. You didn't live as a four year old child, fighting with the rats for scraps of food in the rubble of Berlin, or spend years of your life rotting in an internment camp. Humanity was a stench in the nostrils of creation. Why should I care what happened to that world? The Centaurans have given me immortality and a life of perpetual luxury."

"In return for the death sentence of a race," I said. His selfishness was incredible. Even now, after five years, there was no shame in him for what he had done.

"They would have released the virus cloud, whatever I told them," he said.

He was probably right. The commander of the Exploration Fleet had been a fanatic, desperate to prove himself by producing a colonizable world. Porsche's damning indictment had provided his twisted ambition with the slim justification he needed to release his cargo of death. It was only when the virus had burnt itself out and scout ships were able to land, that the Centaurans began to understand just what it was they had destroyed. Then they found abundant evidence of a planetary culture

which, for all its blindnesses and corruption, had produced treasures of art and philosophy almost equal to their own. Earth was the home of something new in their experience; a schizoid society, whose members had the paradoxical capacity for being snarling animals and near gods at one and the same time.

"Do you know that the whole of the Galactic Federation censured Centaurus over the destruction of humanity?" I asked. "And that they have been charged to make amends in whatever manner possible."

Porsche's eyes widened as the beginnings of fear crawled into his mind. "They can't make me their scapegoat! I only told them the truth."

"Your truth, Porsche . . . And for a promised immortality."

His great white face was shiny with sweat as he surged forward. They can't take back their promise. What have they told you?"

"You will have your immortality, Porsche. The Centaurans keep their bargains, and your death would serve no useful purpose."

The reassurance quietened him. He dragged his sagging body to the nearest divan. When he looked up at me again there was a new light of cunning in his eyes.

"And you?" he said. "How is it that you are alive? What did

they promise you? and what did you give them in return? Who are you, to come here preaching to me?"

His presence was beginning to sicken me beyond belief. I had already made my decision, but it was best to keep up the lie. If I told him the truth he might not wish to remain alive—and his living flesh, corrupt though it was, was important.

"Can't you guess, Porsche?" I said. "The guilt of the Centaurs may be cleansed in part if they make some token towards repairing the destruction they have wrought."

He stared at me, the beginnings of understanding animating his face.

"Yes, Porsche. The Centaurs plan a gradual re-population of the planet. Humanity is to be re-born and you will be the father of the race."

His massive form was trembling as he rose from the divan. Vile laughter bubbled from his obscene mouth as he lumbered towards me.

Overcome by a flood of revulsion, I pulled the hypo gun out and fired. He stiffened immediately, then subsided to the floor like a melting wax figure. Leaving him as he lay—I could not bring myself to touch the foul

creature under these conditions—I hurried out of the room. The drug would keep him safely unconscious for several hours.

Farn was waiting. He sat watching as I removed the false hair and smoothed the plastiflesh solvent over my body.

"Well?" he asked. "Do your surgeon's scruples still bother you?"

I began to scrape the plastiflesh away. I had come here from Centaurus under protest. The entire conception of the project had seemed to me morally indefensible, and I had not believed that any argument could change my mind.

"Have him ready for the theater in two hours. I'll commence the vivisection then," I said.

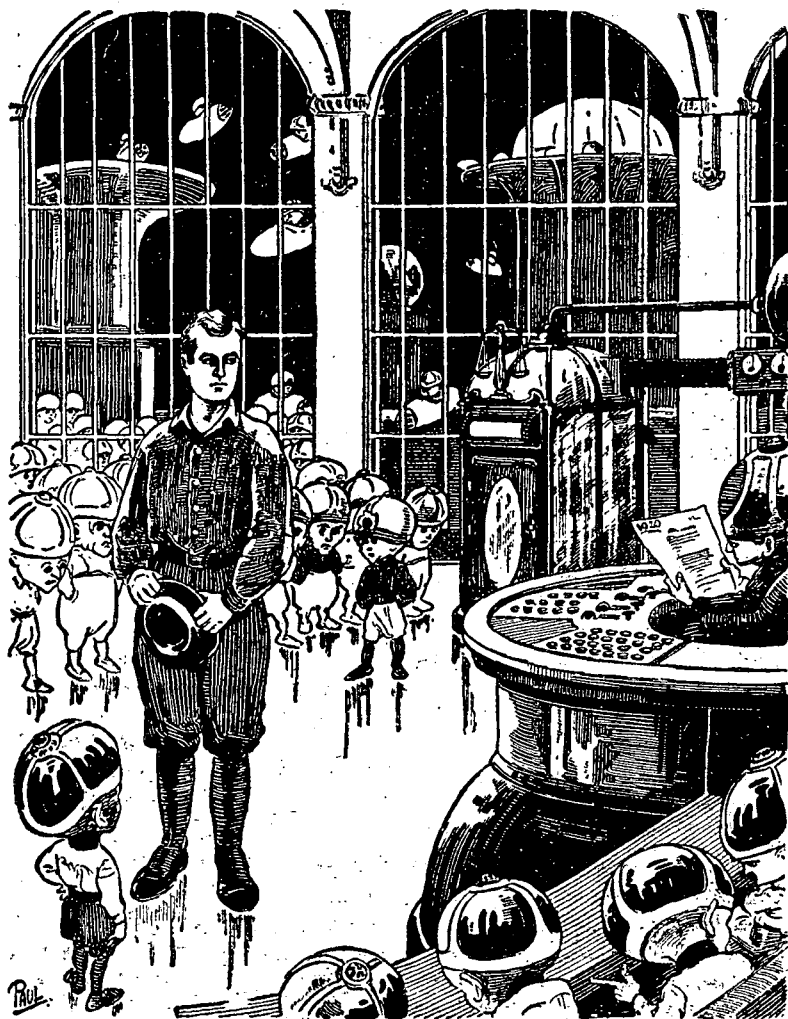
That would be only the beginning of the task. Afterwards would come the microsurgery, reducing Porsches body to the raw material state, all the time preserving the spark of life in each component cell. And then the more exacting, lengthy task of moulding the embryos, watching their growth in nutrient solutions and checking all the time for harmful mutation.

"A promise of immortality fulfilled," I said. The race Porsche's body fathered would live again.

THE END

# The COMING of the ICE

By G. Peyton Wertenbaker



Strange men these creatures of the hundredth century . . .



## A Classic Reprint from AMAZING STORIES, June, 1926

### Introduction by Sam Moskowitz

One of the gravest editorial problems faced by the editors of *AMAZING STORIES* when they launched its first issue, dated April, 1926, was the problem of finding or developing authors who could write the type of story they needed. As a stop-gap, the first two issues of *AMAZING STORIES* were devoted entirely to reprints. But reprints were to constitute a declining portion of the publication's contents for the following four years. The first new story the magazine bought was *Coming of the Ice*, by G. Peyton Wertenbaker, which appeared in its third issue. Wertenbaker was not technically a newcomer to science fiction, since he had sold his first story to Gernsback's *SCIENCE AND INVENTION*, *The Man From the Atom*, in 1923 when he was only 16! Now, at the ripe old age of 19, he was appearing in the world's first

truly complete science fiction magazine.

The scope of his imagination was truly impressive and, despite the author's youth, *Coming of the Ice* builds to a climax of considerable power.

Wertenbaker, under the name of Green Peyton, went on to sell his first novel, *Black Cabin*, in 1933. He eventually became an authority on the Southwest with many regional volumes to his credit: *For God and Texas*, *America's Heartland*, *The Southwest*, and *San Antonio*; *City of the Sun*. But he never lost his interest in space travel, assisting Hubertis Strughold on the writing of *The Green and Red Planet*, a scientific appraisal of the possibilities of life on the planet Mars published in 1953. He also served for a time as London correspondent for *FORTUNE MAGAZINE*.

IT IS strange to be alone, and so cold. To be the last man on earth. . . .

The snow drives silently about me, ceaselessly, drearily. And I am isolated in this tiny white, indistinguishable corner of a blurred world, surely the loneliest creature in the universe. How many thousands of years is

it since I last knew the true companionship? For a long time I have been lonely, but there were people, creatures of flesh and blood. Now they are gone. Now I have not even the stars to keep me company, for they are all lost in an infinity of snow and twilight here below.

If only I could know how long

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it has been since first I was imprisoned upon the earth. It cannot matter now. And yet some vague dissatisfaction, some faint instinct, asks over and over in my throbbing ears: What year? What year?

It was in the year 1930 that the great thing began in my life. There was then a very great man who performed operations on his fellows to compose their vitals—we called such men surgeons. John Granden wore the title "Sir" before his name, in indication of nobility by birth according to the prevailing standards in England. But surgery was only a hobby of Sir John's, if I must be precise, for, while he had achieved an enormous reputation as a surgeon, he always felt that his real work lay in the experimental end of his profession. He was, in a way, a dreamer, but a dreamer who could make his dreams come true.

I was a very close friend of Sir John's. In fact, we shared the same apartments in London. I have never forgotten that day when he first mentioned to me his momentous discovery. I had just come in from a long sleigh-ride in the country with Alice, and I was seated drowsily in the window-seat, writing idly in my mind a description of the wind and the snow and the grey twilight of the evening. It is strange, is it not, that my tale

should begin and end with the snow and the twilight.

Sir John opened suddenly a door at one end of the room and came hurrying across to another door. He looked at me, grinning rather like a triumphant maniac.

"It's coming!" he cried, without pausing, "I've almost got it!" I smiled at him: he looked very ludicrous at that moment.

"What have you got?" I asked.

"Good Lord, man, the Secret—the Secret!" And then he was gone again, the door closing upon his victorious cry, "The Secret!"

I was, of course, amused. But I was also very much interested. I knew Sir John well enough to realize that, however amazing his appearance might be, there would be nothing absurd about his "Secret"—whatever it was. But it was useless to speculate. I could only hope for enlightenment at dinner. So I immersed myself in one of the surgeon's volumes from his fine Library of Imagination, and waited.

I think the book was one of Mr. H. G. Wells', probably "The Sleeper Awakes," or some other of his brilliant fantasies and predictions, for I was in a mood conducive to belief in almost anything when, later, we sat down together across the table. I only wish I could give some idea of the atmosphere that permeated our apartments, the reality it

lent to whatever was vast and amazing and strange. You could then, whoever you are, understand a little the ease with which I accepted Sir John's new discovery.

He began to explain it to me at once, as though he could keep it to himself no longer.

"Did you think I had gone mad, Dennell?" he asked. "I quite wonder that I haven't. Why, I have been studying for many years—for most of my life—on this problem. And, suddenly, I have solved it! Or, rather, I am afraid I have solved another one much greater."

"Tell me about it, but for God's sake don't be technical."

"Right," he said. Then he paused. "Dennell, it's *magnificent*! It will change everything that is in the world." His eyes held mine suddenly with the fatality of a hypnotist's. "Dennell, it is the Secret of Eternal Life," he said.

"Good Lord, Sir John!" I cried, half inclined to laugh.

"I mean it," he said. "You know I have spent most of my life studying the processes of birth, trying to find out precisely what went on in the whole history of conception."

"You have found out?"

"No, that is just what amuses me. I have discovered something else without knowing yet what causes either process.

"I don't want to be technical, and I know very little of what actually takes place myself. But I can try to give you some idea of it."

IT IS thousands, perhaps millions of years since Sir John explained to me. What little I understood at the time I may have forgotten, yet I try to reproduce what I can of his theory.

"In my study of the processes of birth," he began, "I discovered the rudiments of an action which takes place in the bodies of both men and women. There are certain properties in the foods we eat that remain in the body for the reproduction of life, two distinct Essences, so to speak, of which one is retained by the woman, another by the man. It is the union of these two properties that, of course, creates the child.

"Now, I made a slight mistake one day in experimenting with a guinea-pig, and I re-arranged certain organs which I need not describe so that I thought I had completely messed up the poor creature's abdomen. It lived, however, and I laid it aside. It was some years later that I happened to notice it again. It had not given birth to any young, but I was amazed to note that it had apparently grown no older: it seemed precisely in the same state of growth in which I had left it.

"From that I built up. I re-examined the guinea-pig, and observed it carefully. I need not detail my studies. But in the end I found that my 'mistake' had in reality been a momentous discovery. I found that I had only to close certain organs, to rearrange certain ducts, and to open certain dormant organs, and, *mirabile dictu*, the whole process of reproduction was changed.

"You have heard, of course, that our bodies are continually changing, hour by hour, minute by minute, so that every few years we have been literally re-born. Some such principle as this seems to operate in reproduction, except that, instead of the old body being replaced by the new, and in its form, approximately, the new body is created apart from it. It is the creation of children that causes us to die, it would seem, because if this activity is, so to speak, damned up or turned aside into new channels, the reproduction operates on the old body, renewing it continually. It is very obscure and very absurd, is it not? But the most absurd part of it is that it is true. Whatever the true explanation may be, the fact remains that the operation can be done, that it actually prolongs life indefinitely, and that I alone know the secret."

Sir John told me a very great

deal more, but, after all, I think it amounted to little more than this. It would be impossible for me to express the great hold his discovery took upon my mind the moment he recounted it. From the very first, under the spell of his personality, I believed, and I knew he was speaking the truth. And it opened up before me new vistas. I began to see myself become suddenly eternal, never again to know the fear of death. I could see myself storing up, century after century, an amplitude of wisdom and experience that would make me truly a god.

"Sir John!" I cried, long before he was finished, "You must perform that operation on me!"

"But, Dennell, you are too hasty. You must not put yourself so rashly into my hands."

"You have perfected the operation, haven't you?"

"That is true," he said.

"You must try it out on somebody, must you not?"

"Yes, of course. And yet—somehow, Dennell, I am afraid. I cannot help feeling that man is not yet prepared for such a vast thing. There are sacrifices. One must give up love and all sensual pleasure. This operation not only takes away the mere fact of reproduction, but it deprives one of all the things that go with sex, all love, all sense of beauty, all feeling for poetry and the arts. It leaves only the few emotions,

selfish emotions, that are necessary to self-preservation. Do you not see? One becomes an intellect, nothing more—a cold apothecosis of reason. And I, for one, cannot face such a thing calmly.”

“But, Sir John, like many fears, it is largely horrible in the foresight. After you have changed your nature you cannot regret it. What you are would be as horrible an idea to you afterwards as the thought of what you will be seems now.”

“True, true. I know it. But it is hard to face, nevertheless.”

“I am not afraid to face it.”

“You do not understand it, Dennell, I am afraid. And I wonder whether you or I or any of us on this earth are ready for such a step. After all, to make a race deathless, one should be sure it is a perfect race.”

“Sir John,” I said, “it is not you who have to face this, nor any one else in the world till you are ready. But I am firmly resolved, and I demand it of you as my friend.”

Well, we argued much further, but in the end I won. Sir John promised to perform the operation three days later.

... But do you perceive now what I had forgotten during all that discussion, the one thing I had thought I could never forget so long as I lived, not even for an instant? It was my love for Alice—I had forgotten that!

I CANNOT write here all the infinity of emotions I experienced later, when, with Alice in my arms, it suddenly came upon me what I had done. Ages ago—I have forgotten how to feel. I could name now a thousand feelings I used to have, but I can no longer even understand them. For only the heart can understand the heart, and the intellect only the intellect.

With Alice in my arms, I told the whole story. It was she who, with her quick instinct, grasped what I had never noticed.

“But Carl!” she cried, “Don’t you see?—It will mean that we can never be married!” And, for the first time, I understood. If only I could re-capture some conception of that love! I have always known, since the last shred of comprehension slipped from me, that I lost something very wonderful when I lost love. But what does it matter? I lost Alice too, and I could not have known love again without her.

We were very sad and very tragic that night. For hours and hours we argued the question over. But I felt somewhat that I was inextricably caught in my fate, that I could not retreat now from my resolve. I was perhaps, very school-boyish, but I felt that it would be cowardice to back out now. But it was Alice again who perceived a final aspect of the matter.

"Carl," she said to me, her lips very close to mine, "it need not come between our love. After all, ours would be a poor sort of love if it were not more of the mind than of the flesh. We shall remain lovers, but we shall forget mere carnal desire. I shall submit to that operation too!"

And I could not shake her from her resolve. I would speak of danger that I could not let her face. But, after the fashion of women, she disarmed me with the accusation that I did not love her, that I did not want her love, that I was trying to escape from love. What answer had I for that, but that I loved her and would do anything in the world not to lose her?

I have wondered sometimes since whether we might have known the love of the mind. Is love something entirely of the flesh, something created by an ironic God merely to propagate His race? Or can there be love without emotion, love without passion—love between two cold intellects? I do not know. I did not ask then. I accepted anything that would make our way more easy.

There is no need to draw out the tale. Already my hand wavers, and my time grows short. Soon there will be no more of me, no more of my tale—no more of Mankind. There will be only the snow, and the ice, and the cold . . .

THREE DAYS later I entered John's Hospital with Alice on my arm. All my affairs—and they were few enough—were in order. I had insisted that Alice wait until I had come safely through the operation, before she submitted to it. I had been carefully starved for two days, and I was lost in an unreal world of white walls and white clothes and white lights, drunk with my dreams of the future. When I was wheeled into the operating room on the long, hard table, for a moment it shone with brilliant distinctness, a neat, methodical white chamber, tall and more or less circular. Then I was beneath the glare of soft white lights, and the room faded into a misty vagueness from which little steel rays flashed and quivered from silvery cold instruments. For a moment our hands, Sir John's and mine, gripped, and we were saying good-bye—for a little while—in the way men say these things. Then I felt the warm touch of Alice's lips upon mine, and I felt sudden painful things I cannot describe, that I could not have described then. For a moment I felt that I must rise and cry out that I could not do it. But the feeling passed, and I was passive.

Something was pressed about my mouth and nose, something with an etherial smell. Staring eyes swam about me from behind

their white masks. I struggled instinctively, but in vain—I was held securely. Infinitesimal points of light began to wave back and forth on a pitch-black background; a great hollow buzzing echoed in my head. My head seemed suddenly to have become all throat, a great, cavernous, empty throat in which sounds and lights were mingled together, in a swift rhythm, approaching, receding eternally. Then, I think, there were dreams. But I have forgotten them. . . .

I began to emerge from the effect of the ether. Everything was dim, but I could perceive Alice beside me, and Sir John.

"Bravely done!" Sir John was saying, and Alice, too, was saying something, but I cannot remember what. For a long while we talked, I speaking the nonsense of those who are coming out from under ether, they teasing me a little solemnly. But after a little while I became aware of the fact that they were about to leave. Suddenly, God knows why, I knew that they must not leave. Something cried in the back of my head that they *must* stay—one cannot explain these things, except by after events. I began to press them to remain, but they smiled and said they must get their dinner. I commanded them not to go; but they spoke kindly and said they would be back before long. I

think I even wept a little, like a child, but Sir John said something to the nurse, who began to reason with me firmly, and then they were gone, and somehow I was asleep. . . .

WHEN I awoke again, my head was fairly clear, but there was an abominable reek of ether all about me. The moment I opened my eyes, I felt that something had happened. I asked for Sir John and for Alice. I saw a swift, curious look that I could not interpret come over the face of the nurse, then she was calm again, her countenance impassive. She reassured me in quick meaningless phrases, and told me to sleep. But I could not sleep: I was absolutely sure that something had happened to them, to my friend and to the woman I loved. Yet all my insistence profited me nothing, for the nurses were a silent lot. Finally, I think, they must have given me a sleeping potion of some sort, for I fell asleep again.

For two endless, chaotic days, I saw nothing of either of them, Alice or Sir John. I became more and more agitated, the nurse more and more taciturn. She would only say that they had gone away for a day or two.

And then, on the third day, I found out. They thought I was asleep. The night nurse had just come in to relieve the other.



"Has he been asking about them again?" she asked.

"Yes, poor fellow. I have hardly managed to keep him quiet."

"We will have to keep it from him until he is recovered fully." There was a long pause, and I could hardly control my labored breathing.

"How sudden it was!" one of them said. "To be killed like that—" I heard no more, for I leapt suddenly up in bed, crying out.

"Quick! For God's sake, tell me what has happened!" I jumped to the floor and seized one of them by the collar. She was horrified. I shook her with a superhuman strength.

"Tell me!" I shouted, "Tell me—Or I'll—!" She told me—what else could she do.

"They were killed in an accident," she gasped, "in a taxi—a collision—the Strand—!" And at that moment a crowd of nurses and attendants arrived, called by the other frantic woman, and they put me to bed again.

I have no memory of the next few days. I was in delirium, and I was never told what I said during my ravings. Nor can I express the feelings I was saturated with when at last I regained my mind again. Between my old emotions and any attempt to put them into words, or even to remember them, lies always that insurmountable wall

of my Change. I cannot understand what I must have felt, I cannot express it.

I only know that for weeks I was sunk in a misery beyond any misery I had ever imagined before. The only two friends I had on earth were gone to me. I was left alone. And, for the first time, I began to see before me all these endless years that would be the same, dull, lonely.

Yet I recovered. I could feel each day the growth of a strange new vigor in my limbs, a vast force that was something tangibly expressive to eternal life. Slowly my anguish began to die. After a week more, I began to understand how my emotions were leaving me, how love and beauty and everything of which poetry was made—how all this was going. I could not bear the thought at first. I would look at the golden sunlight and the blue shadow of the wind, and I would say,

"God! How beautiful!" And the words would echo meaninglessly in my ears. Or I would remember Alice's face; that face I had once loved so inextinguishably, and I would weep and clutch my forehead, and clench my fists, crying.

"O God, how can I live without her!" Yet there would be a little strange fancy in my head at the same moment, saying,

"Who is this Alice? You know

no such person." And truly I would wonder whether she had ever existed.

So, slowly, the old emotions were shed away from me, and I began to joy in a corresponding growth of my mental perceptions. I began to toy idly with mathematical formulae I had forgotten years ago, in the same fashion that a poet toys with a word and its shades of meaning. I would look at everything with new, seeing eyes, new perception, and I would understand things I had never understood before, because formerly my emotions had always occupied me more than my thoughts.

And so the weeks went by, until, one day, I was well.

... What, after all, is the use of this chronicle? Surely there will never be men to read it. I have heard them say that the snow will never go. I will be buried, it will be buried with me; and it will be the end of us both. Yet, somehow, it eases my weary soul a little to write. . . .

Need I say that I lived, thereafter, many thousands of thousands of years, until this day? I cannot detail that life. It is a long round of new, fantastic impressions, coming dream-like, one after another, melting into each other. In looking back, as in looking back upon dreams, I seem to recall only a few isolated periods clearly; and, it seems

that my imagination must have filled in the swift movement between episodes. I think now, of necessity, in terms of centuries and millennia, rather than days and months. . . . The snow blows terribly about my little fire, and I know it will soon gather courage to quench us both . . .

YEARS passed, at first with a sort of clear wonder. I watched things that took place everywhere in the world. I studied. The other students were much amazed to see me, a man of thirty odd, coming back to college.

"But Judas, Dennel, you've already got your Ph.D! What more do you want?" So they would all ask me. And I would reply;

I want an M.D. and an F.R.C.S." I didn't tell them that I wanted degrees in Law, too, and in Biology and Chemistry, in Architecture and Engineering, in Psychology and Philosophy. Even so, I believe they thought me mad. But poor fools! I would think. They can hardly realize that I have all of eternity before me to study.

I went to school for many decades. I would pass from University to University, leisurely gathering all the fruits of every subject I took up, revelling in study as no student revelled ever before. There was no need of

hurry in my life, no fear of death too soon. There was a magnificence of vigor in my body, and a magnificence of vision and clarity in my brain. I felt myself a super-man. I had only to go on storing up wisdom until the day should come when all knowledge of the world was mine, and then I could command the world. I had no need for hurry. O vast life! How I gloried in my eternity! And how little good it has ever done me, by the irony of God.

For several centuries, changing my name and passing from place to place, I continued my studies. I had no consciousness of monotony, for, to the intellect, monotony cannot exist: it was one of those emotions I had left behind. One day, however, in the year 2132, a great discovery was made by a man called Zarentzov. It had to do with the curvature of space, quite changing the conceptions that we had all followed since Einstein. I had long ago mastered the last detail of Einstein's theory, as had, in time, the rest of the world. I threw myself immediately into the study of this new, epoch-making conception.

To my amazement, it all seemed to me curiously dim and elusive. I could not quite grasp what Zarentzov was trying to formulate.

"Why," I cried, "the thing is a

monstrous fraud!" I went to the professor of Physics in the University I then attended, and I told him it was a fraud, a huge book of mere nonsense. He looked at me rather pityingly.

"I am afraid, Modevski," he said, addressing me by the name I was at the time using, "I am afraid you do not understand it, that is all. When your mind has broadened, you will. You should apply yourself more carefully to your Physics." But that angered me, for I had mastered my Physics before he was ever born. I challenged him to explain the theory. And he did! He put it, obviously, in the clearest language he could. Yet I understood nothing. I stared at him dumbly, until he shook his head impatiently, saying that it was useless, that if I could not grasp it I would simply have to keep on studying. I was stunned. I wandered away in a daze.

For do you see what happened? During all those years I had studied ceaselessly, and my mind had been clear and quick as the day I first had left the hospital. But all that time I had been able only to remain what I was—an extraordinarily intelligent man of the twentieth century. And the rest of the race had been progressing! It had been swiftly gathering knowledge and power and ability all that time, faster and faster, while I had been only

remaining still. And now here was Zarentzov and the teachers of the Universities, and, probably, a hundred intelligent men, who had all outstripped me! I was being left behind.

And that is what happened. I need not dilate further upon it. By the end of that century I had been left behind by all the students of the world, and I never did understand Zarentzov. Other men came with other theories, and these theories were accepted by the world. But I could not understand them. My intellectual life was at an end. I had nothing more to understand. I knew everything I was capable of knowing, and, thenceforth, I could only play wearily with the old ideas.

MANY things happened in the world. A time came when the East and West, two mighty unified hemispheres, rose up in arms: the civil war of a planet. I recall only chaotic visions of fire and thunder and hell. It was all incomprehensible to me: like a bizarre dream, things happened, people rushed about, but I never knew what they were doing. I lurked during all that time in a tiny shuddering hole under the city of Yokohama, and by a miracle I survived. And the East won. But it seems to have mattered little who did win, for all the world had become, in all ex-

cept its few remaining prejudices, a single race, and nothing was changed when it was all rebuilt again, under a single government.

I saw the first of the strange creatures who appeared among us in the year 6371, men who were later known to be from the planet Venus. But they were repulsed, for they were savages compared with the Earthmen, although they were about equal to the people of my own century, 1900. Those of them who did not perish of the cold after the intense warmth of their world, and those who were not killed by our hands, those few returned silently home again. And I have always regretted that I had not the courage to go with them.

I watched a time when the world reached perfection in mechanics, when men could accomplish anything with a touch of the finger. Strange men, these creatures of the hundredth century, men with huge brains and tiny shriveled bodies, atrophied limbs, and slow, ponderous movements on their little conveyances. It was I, with my ancient compunctions, who shuddered when at last they put to death all the perverts, the criminals, and the insane, ridding the world of the scum for which they had no more need. It was then that I was forced to produce my tattered old papers, proving my identity

and my story. They knew it was true, in some strange fashion of theirs, and, thereafter, I was kept on exhibition as an archaic survival.

I saw the world made immortal through the new invention of a man called Kathol, who used somewhat the same method "legend" decreed had been used upon me. I observed the end of speech, of all perceptions except one, when men learned to communicate directly by thought, and to receive directly into the brain all the myriad vibrations of the universe.

All these things I saw, and more, until that time when there was no more discovery, but a Perfect World in which there was no need for anything but memory. Men ceased to count time at last. Several hundred years after the 154th Dynasty from the Last War, or, as we would have counted in my time, about 200,000 A.D., official records of time were no longer kept carefully. They fell into disuse. Men began to forget years, to forget time at all. Of what significance was time when one was immortal?

**A**FTER long, long uncounted centuries, a time came when the days grew noticeably colder. Slowly the winters became longer, and the summers diminished to but a month or two. Fierce

storms raged endlessly in winter, and in summer sometimes there was severe frost, sometimes there was only frost. In the high places and in the north and the sub-equatorial south, the snow came and would not go.

Men died by the thousands in the higher latitudes. New York became, after awhile, the furthest habitable city north, an arctic city, where warmth seldom penetrated. And great fields of ice began to make their way southward, grinding before them the brittle remains of civilizations, covering over relentlessly all of man's proud work.

Snow appeared in Florida and Italy one summer. In the end, snow was there always. Men left New York, Chicago, Paris, Yokohama, and everywhere they traveled by the millions southward, perishing as they went, pursued by the snow and the cold, and that inevitable field of ice. They were feeble creatures when the Cold first came upon them, but I speak in terms of thousands of years; and they turned every weapon of science to the recovery of their physical power, for they foresaw that the only chance for survival lay in a hard, strong body. As for me, at last I had found a use for my few powers, for my physique was the finest in that world. It was but little comfort, however, for we were all united in our

awful fear of that Cold and that grinding field of Ice. All the great cities were deserted. We would catch silent, fearful glimpses of them as we sped on in our machines over the snow—great hungry, haggard skeletons of cities, shrouded in banks of snow, snow that the wind rustled through desolate streets where the cream of human life once had passed in calm security. Yet still the Ice pursued. For men had forgotten about that Last Ice Age when they ceased to reckon time, when they lost sight of the future and steeped themselves in memories. They had not remembered that a time must come when Ice would lie white and smooth over all the earth, when the sun would shine bleakly between unending intervals of dim, twilight snow and sleet.

Slowly the Ice pursued us down the earth, until all the feeble remains of civilization were gathered in Egypt and India and South America. The deserts flowered again, but the frost would come always to bite the tiny crops. For still the Ice came. All the world now, but for a narrow strip about the equator, was one great silent desolate vista of stark ice-plains, ice that brooded above the hidden ruins of cities that had endured for hundreds of thousands of years. It was terrible to imagine the awful solitude and the endless twilight

that lay on these places, and the grim snow, sailing in silence over all.

It surrounded us on all sides, until life remained only in a few scattered clearings all about that equator of the globe, with an eternal fire going to hold away the hungry Ice. Perpetual winter reigned now; and we were becoming terror-stricken beasts that preyed on each other for a life already doomed. Ah, but I, I the archaic survival, I had my revenge then, with my great physique and strong jaws—God! Let me think of something else. Those men who lived upon each other—it was horrible. And I was one.

SO INEVITABLY the Ice closed in. . . . One day the men of our tiny clearing were but a score. We huddled about our dying fire of bones and stray logs. We said nothing. We just sat, in deep, wordless, thoughtless silence. We were the last outpost of Mankind.

I think suddenly something very noble must have transformed these creatures to a semblance of what they had been of old. I saw, in their eyes, the question they sent from one to another, and in every eye I saw that the answer was, Yes. With one accord they rose before my eyes and, ignoring me as a baser creature, they stripped away

their load of tattered rags and, one by one, they stalked with their tiny shrivelled limbs into the shivering gale of swirling, gusting snow, and disappeared. And I was alone. . . .

So am I alone now. I have written this last fantastic history of myself and of Mankind upon a substance that will, I know, outlast even the snow and the Ice—as it has outlasted Mankind that made it. It is the only thing with which I have never parted. For is it not irony that I should be the historian of this race—I, a savage, an “archaic survival?” Why do I write? God knows, but some instinct prompts me, although there will never be men to read.

I have been sitting here, waiting, and I have thought often of Sir John and Alice, whom I loved. Can it be that I am feeling again, after all these ages, some tiny portion of that emotion, that great passion I once knew? I see her face before me, the face I

have lost from my thoughts for eons, and something is in it that stirs my blood again: Her eyes are half-closed and deep, her lips are parted, as though I could crush them with an infinity of wonder and discovery. O God! It is love again, love that I thought was lost! They have often smiled upon me when I spoke of God, and muttered about my foolish, primitive superstitions. But they are gone, and I am left who believe in God, and surely there is purpose in it.

I am cold, I have written. Ah, I am frozen. My breath freezes as it mingles with the air, and I can hardly move my numbed fingers. The Ice is closing over me, and I cannot break it any longer. The storm cries weirdly all about me in the twilight, and I know this is the end. The end of the world. And I—I, the last man. . . .

The last man. . . .

. . . I am cold—cold. . . .

But is it you, Alice; Is it you?

#### THE END

THE 19th WORLD SCIENCE FICTION CONVENTION, sponsored this year by the Seattle Science Fiction Club, will take place September 2, 3 & 4, 1961, at the recently completed Hyatt House. Robert A. Heinlein will be the Guest of Honor. Advance convention memberships are \$2 per person, with an additional \$1 registration fee to be collected at the Convention. Send inquiries to Seattle Science Fiction Club, Box 1365, Broadway Branch, Seattle 2, Washington.



(Continued from page 5)

IT SEEMS to us that the Brookings people and Mr. Toynbee ought to have a talk. The results could be valuable for all of us. For what other factors can be involved in the response to a crisis caused by the discovery of alien intelligence than "the spiritual worlds within ourselves" that Mr. Toynbee mentioned?

It is not hard to understand why responsible thinkers can foresee an Earth panic in the light of the news that man is not the be-all and end-all of Creation. Even though we have been around barely a cosmic instant, our egos are all-encompassing. For several millennia we have been looking up into the sky and saying to Whatever is there: "Nobody here but us chickens, Massa!" Most of us believe it. Most of us have to believe it, because otherwise the poor defenses we have labored to erect against the batterings of life would crumble into dust. The superiority of *homo sapiens* in the universe compensates for whatever inferiority any individual *homo sapiens* may be suffering here on earth.

It is, thus, the function of the spiritual worlds within ourselves to help us face the fact that we are not top dog, or only dog, in the universe. If we started to be honest about this, it is just vaguely possible that we might start to be honest about a lot of other things—other areas where our spiritual worlds have been too long under-exercised. Science-fiction buffs often take pride in the fact that the construction of the atomic bomb was forecast by an sf writer in an sf magazine. Yet we might have been able to take more pride—and a more-deserved pride—if some of us had given a bit more thought to the human meaning of the discovery, if we had brought the spiritual, as well as the technical, side of our natures to bear upon the problem: if we had considered the larger implications of the bomb for the future of mankind, rather than the purely technical implications.

Whether we find aliens or they find us; no matter what brave new world science leads us into next, we will be far better equipped to cope with it if we start making contact now with "the spiritual worlds within ourselves."

NL



# THE SPECTROSCOPE

**A Canticle for Leibowitz.** By Walter M. Miller, Jr. 278 pp. Bantam Books. Paper: 35¢.

This is not a new book, but a reprint of a book first published in 1959. However, since I missed it the first time around, I want to say a few words about it now because it is an extremely important book, not only for its message but also for its high literary quality. *A Canticle for Leibowitz* is a truly original novel, and they are as rare as three-dollar bills. It has a fresh approach (albeit to an unpleasant problem), humanly fallible characters, an exciting prose style and a complex and interesting philosophy. For once, a book fulfills the promise of its extravagant cover blurbs—it really is “in the great tradition of *Brave New World* and 1984.”

The book is divided into three sections. In the first, the world is plunged into such a darkness as had not been seen since the Dark

Ages that followed the victory of the barbarian hordes over the Roman Empire. The only flicker of knowledge is that kept burning by dedicated monks in isolated abbeys, as had also been the case in those earlier times. The monks, called bookleggers, venerate and illuminate such books and documents as have survived the holocaust even though they do not comprehend them all.

In the second part, twelve hundred years have passed and secular knowledge has reached the point where it is being accepted again. Experiments are tried using the preserved writings. There is electricity once more. The period described in Part One begins to take on a legendary aura.

In the third part, man is reaching for space again. There are cars and planes—and bombs. As secularism rises to its zenith, the power of the Church declines

although they are still the keepers of the Memorabilia, the sacred writings. But the monks continue with their efforts to warn, exhort, admonish, and supply a conscience for this era when Man seems ready to show his folly again. More than this I don't want to reveal for there is an element of suspense to the final chapters.

From my description it may seem that the whole novel is one of unrelieved gloom. This is not so. Though the trend of the story is in that direction, there is a wealth of comic detail—in the characters, in the customs, in the traditions surrounding the abbey and St. Leibowitz. There is plenty in the novel to occupy even the casual reader, but any extra knowledge that can be brought to bear will reward the reader lavishly. A smattering of Latin, Catholic theology, and/or medieval history will enrich and deepen the experiencing of this extraordinary book. But even without this extra equipment, I commend it to your attention.

**The Fifth Galaxy Reader.** Edited by H. L. Gold. 260 pp. Doubleday & Company, Inc. \$3.95.

In his introduction, H. L. Gold writes that the editor's responsibility is to his whole audience, not just to one segment of it. He concludes, therefore, that no one reader will like all the stories in-

cluded in his anthology, and should the reader like none of them, he's even less satisfiable than an editor.

Well, I certainly don't fall into his first category for I don't like all his stories, but I come uncomfortably close to the second possibility, that of liking none. Oh, there are two or three good stories but even these are just good rather than outstanding, and according to the law of averages I'd be bound to like some even if they were selected at random, which they were not. However, I'm not willing to accept Mr. Gold's way out by hiding behind the rationale that I'm less satisfiable than he. The plain truth of the matter is that I've never had any trouble liking the majority of stories in the previous *Galaxy* anthologies, and the current one is not up to their standard. An anthology is not just any old collection; the term anthology implies a certain selectivity, a certain minimum performance that is sadly lacking here. And in the face of this fact, Mr. Gold's ingenious explanation appears more like self defense than anything else.

The two brightest exceptions to this gloomy state of affairs are Fritz Leiber's "The Last Letter," a hilarious commentary on the machine age, and Gordon Dickson's "Black Charlie," a poignant and truly original look at the

world of art. Cordwainer Smith has a well written story, too, but efforts by Frederik Pohl and Avram Davidson (among others) are disappointing and unimportant.

In a venture such as the *Galaxy* series, however, which has maintained such high standards in the past, it is not proper to condemn solely on grounds of taste, nor is it necessary because the weak stories have a common weakness, one that can be pinpointed: These stories depend too much on the gimmick, the trick, the surprise ending, the sudden switch on the last page. This might succeed with one story, but to have one after another like this points up two things: first, their lack of basic substance, and second, the foolishness of the editor's claim that he is responsible to his whole audience while offering only a single type of story.

**NEW MAPS OF HELL.** *By Kingsley Amis. 141 pp. Balantine Books. Paper: 35¢.*

It is difficult to know what to say about Mr. Amis's examination of the field of science fiction. Books of this nature are few and far between, so there is certainly a need for them. But I seriously doubt whether this particular book is more than the tiniest drop in an almost bottomless bucket.

Before I go on, however, I want to say that I don't agree with much the author has to say. Yet, I think that my criticisms are not the result of personal bias, but are those that any well-read and moderately astute fan would make, even if he agreed with Mr. Amis. And in the last analysis, the most serious flaw would be if the author took no stand, had no outstanding attitude one way or the other. A book of this sort must start from some point of view or it would be a shapeless hodge-podge.

First of all, the very organization of his book is open to question. Certainly this is probably one of the hardest nuts to crack in writing a book of this sort. But it seems to me that the basic divisions of his book are highly arbitrary. He picks a few categories and stuffs the various books he wants to describe into them whether they belong or not (and some may belong in more than one).

Secondly, for the task he has set himself he would need a book several times as long as this one. He attempts a history of science fiction, a survey of the various types, a look at what is going on not only in books but also magazines and fanzines, and a survey of science fiction's standing among other types of literature.

The end result of this is a confusion in my mind as to just

whom the book is meant for or who would really enjoy it or find it interesting. The general reader, I fear, will be bored by it because the breadth of what the author is trying to encompass is such that the text is no more than a cataloging of names and titles. Yet it is not complete enough to qualify as good source material.

The science fiction fan will be annoyed by it for several reasons. Though he throws names around with abandon, there are some incredible omissions; such as only two tiny mentions of Isaac Asimov, neither about anything important. The fan will also grit his teeth over some of the generalizations, i.e., the "hells" that interest the sf writer are always urban. Such ideas are permissible but a writer of Mr. Amis's stature ought to back them up more thoroughly. The fan is also likely to take exception to the use of so many quotes. Anyone who is at all familiar with the authors discussed does not need the quotes to know what the author is talking about. On the other hand, isolated quotes, even generous ones, will not be that meaningful to the non-fan. Another bad feature is the author's habit of throwing in little irrelevancies from other fields (history, music, etc.) as if to show that he is well-rounded. The science-fiction devotee prob-

ably doesn't care whether he is or not, and so one becomes a bit suspicious that these gems may have been dropped to show the Princeton men that one can be cultured and like science fiction, too. (The text of the book is based on lectures the author delivered at Princeton in 1959.)

These criticisms almost seem ungrateful after all the years I have used this column as a wailing wall, pleading that science fiction be accepted as literature. Along comes an outside writer of some reputation who does, and I jump on him. But a slapdash job does not help anyone. Perhaps the next person will take, instead of the whole field, one of its giants and write a critical study of him; not a biography, but an examination in depth of his work and its meanings.

**MAN AND SPACE.** The Next Decade. By Ralph E. Lapp. 183 pp. Harper & Brothers. \$4.95.

This is another distinguished addition to the rapidly growing list of fact books on the problems and accomplishments of space investigation. The author, Dr. Ralph Lapp, is a scientist of note; but that would be useless for his present purposes if he did not also have the much rarer ability to take material of great complexity and make it clear and interesting without the slightest

(Continued on page 144)

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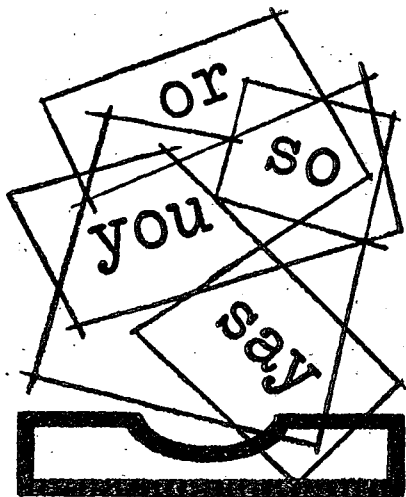
Dear Editor:

I've sat quietly by and seen many changes in science fiction over the past years, some for the better, a few that took it lower, but mostly it was climbing steadily higher.

That was my line of thinking before you tore it to shreds by publishing your 35th Anniversary issue. Now I realize that although plots are changing, along with the times, the quality of the stories hasn't really changed much. Now as then for every great story, there are ten good ones, a hundred mediocre ones, and a thousand poor stories published.

In my opinion, if "Armageddon—2419" had never before been published, with a couple of minor changes, it would be one of the greats, even classed among the "modern" sf.

Is it possible to do anything about the deplorable condition of the modern, so called "science fiction" movies that Hollywood has been palming off on the public the last few years? With all the good science fiction available, why do we have to keep suffering through innumerable films of a dinosaur tearing Tokyo to pieces or some ill-begotten thing that oozes down streets or walks through walls? About the only decent sf movies I can remember are "When Worlds Col-



hide," "War of the Worlds," "Forbidden Planet," and maybe two or three more. The only people who seem to think good sf may have a real market are Rod Serling (who has more science fiction in a half-hour show than you could find in almost any dozen movies), the producers of the "Twilight Zone" and possibly those connected with a new show on CBS called "Way Out." Also, the Dupont Show of the Month I think it was, did a very commendable job in adapting "Flowers for Algernon" to TV.

But the crux of the problem seems to lie in the fact that no one who can do anything about alleviating the shortage seems to realize that there are millions of science fiction fans throughout the world who sit through

... OR SO YOU SAY

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countless hours of Gorgo, the fire monster and the like, just hoping and praying that maybe at last we'll see something that will make a science-fictioneer's heart feel good, only to walk out, probably half-way through the picture, feeling very let down.

It seems to me that you and your fellow editors and publishers would seek the same goal as I. I have heard my friends say many times, after sitting through some of the trash, "Boy, those sf writers must be nuts, writing junk like that." Now you know as well as I do, that they think that the content of sf books and magazines will be the same, so they don't even take the trouble to find out differently.

If a large enough percentage of sf movies would use quality sf instead of junk, (there can't be a shortage of it. I've seen stories that could have been admirably adapted to the screen; that probably wouldn't have cost as much to film as the scripts that are used) I'd venture to say that sf magazines and books would find their sales increasing quite substantially. It stands to reason that if a person sees a good sf movie and likes it, he will want more and the only place he can get it is in books and magazines.

Kenneth R. Erick  
7614 W. Forest Preserve  
Chicago 34, Ill.

● *You're quite right about the poor quality of movie sf. From time to time we have been offered the opportunity to print the script of a sf movie, and have been forced to turn down the chance because of the poor quality of the story.*

*The sf boom in movies is increasing, but there is some hope for better quality. Producers are now planning to make films of some of the H. G. Wells novels, and to use some of the wonderful Verne stories as bases for pictures. Trouble is, there are not millions of sf fans, as you assume. Real sf fans are a small group, who are overwhelmed by those who prefer to see a monster slithering through a city rather than see ordinary people in extraordinary situations using their hearts and brains.*

Dear Editor:

Aw, come off it now! You and Asimov may understand Slime Gods and BEMs, but you certainly don't understand women. Take "Playboy and the Slime God," for instance. Now, if that slimy alien had evidenced any lustful intentions toward what's-her-name, the woman would have fought to the bloody death to defend her (doubtful) virtue. However, since the aliens so clearly found the Earthwoman's charms nonexistent, her womanly pride would not have rested until she

had been able to seduce them, in some fashion. She would have retained no interest in the Earthman, however exciting he might be; and what's-his-name was as exciting and appealing as a dead cockroach. Rather, the woman would have persisted until she had participated in some fashion in the creative processes of the aliens. If these processes had indeed been so individual and private, i.e., budding, that the Earthwoman could not "cooperate," as Asimov so quaintly put it, then the woman would at least have wormed her way into the monster's confidence until she was allowed to witness the activity and participate to the extent of giving frequent, detailed, and probably conflicting instructions to the alien as to how he/she/it/they should conduct the event.

The matter of aliens and Earthwomen will be an interesting problem, if it ever arises. Having dominated man—emotionally, sexually, intellectually, culturally, physically, psychologically, sociologically, and economically—Earthwoman would not be able to keep her hands (figuratively and literally) off any alien whose sex could possibly be construed as masculine or partly masculine. Women, depending upon their characters, would be making "men" out of aliens or "monkeys" out of aliens

—or both, if there is any real difference. But, then, that's something a mere man could not understand. Or perhaps it's something men don't really care to face up to.

Mrs. Patsy Ruth Wilson  
3901 Calmont  
Ft. Worth 7, Texas

● *Why, it's something NL faces every day. If women are going to react to aliens as Mrs. Wilson suggests, this raises the question of how alien females would react to earthmen. Same way, probably. Therefore hard radiation is the least of the problems facing our intrepid astronauts.*

Dear Editor:

In your editorial from the December 1960 issue of *Amazing* you discussed the George Pal production of H. G. Wells' classic tale, *The Time Machine*. The three books you suggested for the Time Traveler to take back to 802,701 were very good choices, but I would like to submit three more of equal value.

These selections were made by Alfred McCoy Andrews and myself. We selected our books from three distinctive categories: religion, history, and science, taking into consideration, of course, the fact that they were all published prior to 1900.

... OR SO YOU SAY

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In the first category we selected *The Bible* because it is the wellspring for any intelligent religion which holds as its prime premise the influence of a theocracy. *The Bible* also offers much in literary value from its beautiful poetry and inspiring drama.

Our second selection is Gibbon's *The Decline and Fall of the Roman Empire*, because Rome was a paramount world power, whose boundaries took in more land area and national groups than any other empire. Also instrumental in showing not only attacks from without, but disintegration from within. This book appears in three and six volume sets, so there could possibly be complications there, but its value would be overwhelming for a man who must create a living race from a merely existing race. Here he has the pitfalls that the greatest of empires succumbed to; he has the benefit of

following this book and avoiding the mistakes of Rome.

Our third choice was difficult to make, but we finally decided upon Darwin's *Origin of the Species* rather than the Da Vinci notebooks or any number of the Greek scholars. While Darwin may not be valid in all aspects, he does offer an excellent coverage of man's growth from prehistoric times to the present.

We think our selections are for the good of the Time Traveler and the Elois. What do you think?

Billy Joe Plott,  
Alfred McCoy Andrews  
1659 Lakewood Drive  
Birmingham, Alabama

● *Terrific. Well thought out. Useful. Scholarly. Apt. But, finessing the 1900 A.D. situation, don't you think you should include a copy of the Adventures of Eloise?*

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#### THE SPECTROSCOPE

(Continued from page 139)

sign of patronizing or "writing down" to his audience.

In a straightforward manner he examines the new space environment around us; the Soviet breakthrough; our own space program (with proper castigation not only of our initial shortsightedness, but also of our tendency to plan even now for immediate rather than long term goals); the peaceful and the

military uses of space and space vehicles; and a brief look at the planets and life in the universe, not in an abstract way but in relation to the other topics he has discussed. He is assisted in his worthy task by excellent diagrams, sketches, and photographs plus a glossary and index.

This book is a "must" for novices, and a workable and useful synthesis for those who already have some knowledge of the field.



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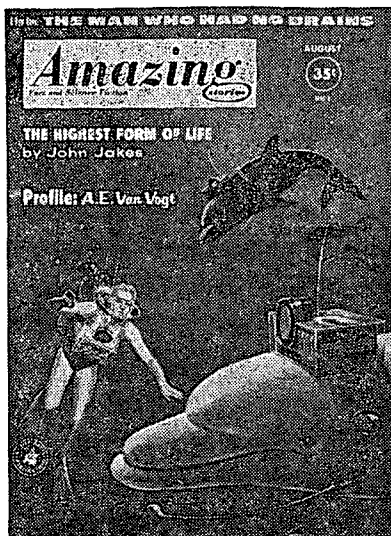
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The dolphins on the Emsh cover (1.) play an important part in a fascinating story by **John Jakes** about a man who tried to communicate with another species. You will not soon forget "The Highest Form of Life."

In addition the August **Amazing** features a full-length profile and critical appreciation of one of the great sf writers of all time—**A. E. Van Vogt**. There will be other stories, plus all the regular features.

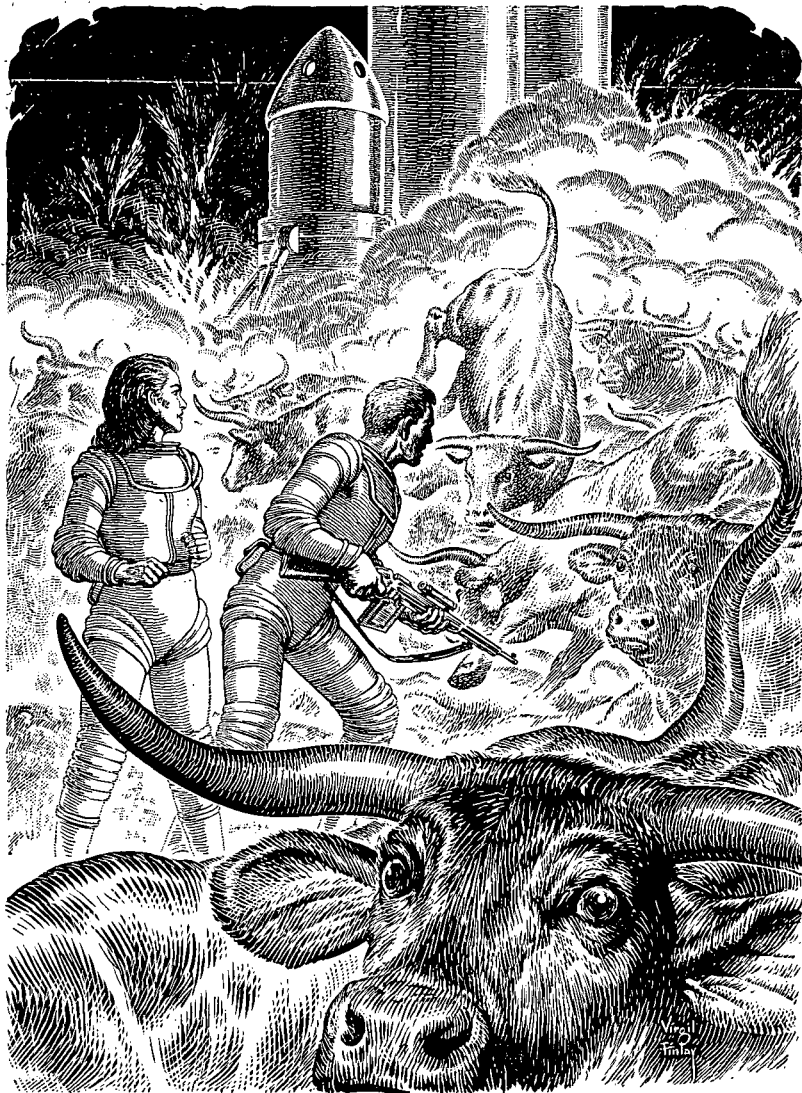
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**THIS  
SYMBOL  
IS YOUR  
ASSURANCE OF  
QUALITY — LEADERSHIP — APPEAL**





*"More and more cattle came pounding past the rampart of his victims . . . ."*

*(See Pariah Planet)*